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SURGERY OF THE INTESTINES

WITH SPECIAL REFERENCE TO THE UNDERLYING BIOLOGIC PRINCIPLES *

J. SHELTON HORSLEY, M.D.

RICHMOND, VA.

The biologic processes that take place during the healing of any wound are always interesting, but a knowledge of what goes on during the healing of a properly sutured intestinal incision is necessary in order to comprehend the reasons for the technic.

The law of apposing peritoneal surfaces in suturing wounds of the bowel was the first great step in the progress of intestinal surgery, and was established by Antoine Lembert in 1826, nearly a hundred years ago. This principle followed observation of nature's method of closing perforations by peritoneal adhesions and a deposit of lymph.

Hertzler [1] has demonstrated that the healing of the peritoneum of wounds is due to the direct transformation of the deposit of lymph into connective tissue without the intermediate stage of granulation tissue formation. This direct transformation, however, can occur only when there is no marked infection. Otherwise, healing is by granulation.

Within a few hours there is a firmly agglutinated surface along a properly sutured intestinal incision. After twenty-four hours, the wound of the sutured bowel becomes weaker, owing to the softening of the lymphatic exudate, and as permanent union progresses the wound again becomes stronger about the fourth day.[2]

The experiments of the late Professor Mall [3] and Professor Halsted have shown the regenerating changes in sutured intestine. Mall found that there was destruction of the margins of the diaphragm that was turned in, particularly of the mucosa, which is partly due to necrosis and partly to the destroying power of the crypts in the mucosa. At the end of about the fifth day, according to Gould [4] the slough separates, leaving a clean, ulcerated surface. The mucous membrane regenerates, beginning at the bases of the crypts, which seem to be more resistant than the rest of the epithelium. These cells multiply and spread in all directions, and cover the raw surface left by the separation of the necrotic margin of the diaphragm. This epithelium sends down invaginations in the tissue, which are converted into crypts, between which new villi arise and grow into the lumen of the intestine. According to Mall, under favorable conditions the mucosa has fully regenerated at the end of three weeks.

Mall asserts that the muscularis mucosae is eventually regenerated as well as the other layers of muscle. Gould, from his experiments, feels that the muscle is eventually united by a very narrow scar, but that true regeneration does not occur. The time required for complete regeneration of the mucous membrane was in Mall's experiments three weeks, though Gould finds that the epithelium of the mucosa covered the raw surface in many of his experiments in seven days. Of course, this epithelial layer at first is very thin, and the cells are atypical.

The straightening of the diagphragm and the loosening of the sutures occurs, according to Mall, about four weeks after the anastomosis, though in Gould's work he failed to see a complete straightening of the wall of the intestine, such as was described by Mall. The sutures are usually extruded into the lumen of the bowel. After two months, all coats of the sutured intestine are practically fully regenerated, so that the line of union cannot be detected with the naked eye. There is usually merely a slight thickening. Microscopic examination shows only a very narrow scar.

Advantage should always be taken of the quick sealing of the peritoneal surfaces by having the technic of intestinal suturing so planned that one peritoneal surface will be apposed to another, or else one intact peritoneal surface should be apposed to a raw surface—which seems to be equally effective. To make a safe suture, the submucosa must be caught in each stitch (Halsted.).

In all types of surgery, the underlying principles should be to remove or to correct the pathologic conditions and then to restore so far as possible the physiologic function. In order to do this satisfactorily in intestinal surgery, we must, first of all, know what pathologic conditions exist and how the diseased tissue can be satisfactorily extirpated or corrected; and, secondly, we must be acquainted with the normal function of the intestine.

In no region of the human body should surgical technic be more intimately interwoven with physiologic principles than in the gastro-intestinal tract. In a review of the course of food from its entrance into the stomach to its deposit in the rectum, we find a widely different set of conditions in the various segments of the gastro-intestinal canal. The physiology of stomach digestion has engrossed the activities of numerous research workers and is not by any means definitely settled. Many things in gastric digestion have been observed that are not yet fully explained, but the general principles are doubtless correctly determined. The function of the duodenum is important. It is the mixing chamber of the acid contents of the stomach with

* Read before the Academy of Medicine of Northern New Jersey, Newark, N. J., Feb. 20, 1924.

1. Hertzler, A. E.: The Peritoneum, St. Louis, C. V. Mosby Company **1**: 238-275, 1919.
2. Horsley, J. S.: Ann. Surg. **38**: 755-758 (Nov.) 1903.
3. Mall, F.: Johns Hopkins Hosp. Rep. **1**: 76. Halsted, W. S.: Am. J. M. Sc. **94**: 436, 1887.
4. Gould, A. H.: Technic of Operations upon the Intestines and Stomach, Philadelphia, W. B. Saunders Company, 1906, pp. 22-42.

the alkaline contents of the duodenum. Into the duodenum pours the secretion from the liver and the pancreas, containing ferments as well as some excretory matter, and this secretion has a strongly alkaline reaction. The course of the duodenum is relatively fixed, and consequently it has but little play. Adhesions, particularly along its upper portion, which restrict even slightly the normal limited range of motion of the duodenal walls, may produce marked symptoms; whereas adhesions in a more mobile portion of the small bowel that can accommodate itself to various positions would give rise to no complaint unless actual obstruction occurred. The contents of the duodenum and upper jejunum are almost sterile. The peristalsis in the upper jejunum is active and rapid, though with comparatively little force. Obstruction in this region is quickly fatal, and is easily produced by very slight pressure that would not cause fatal obstruction in the lower ileum.

Dragstedt[5] has shown that if in an animal the upper jejunum is divided and the two ends are brought into the abdominal wound, the slight pressure from the margins of the abdominal incision is sufficient to cause obstruction and death; but if a rubber tube is inserted into the oral end of the bowel, death does not occur. When the lower ileum is similarly brought into the abdominal wound and divided, no obstructive symptoms arise.

SURGERY OF DUODENUM AND UPPER JEJUNUM

These facts are indicative of the proper technic to be utilized in surgery of the duodenum and upper jejunum: 1. It is quite necessary to avoid adhesions in operations on the duodenum. 2. It is essential to have as small a diaphragm in the sutured bowel of the upper jejunum as possible. 3. While ordinary care for the prevention of contamination should be taken, the contents of the upper jejunum have few bacteria, and it is important to expose the lumen of the bowel and to suture so as to insure not only correct approximation, but also the maintenance of a large lumen with a small diaphragm. In the lower ileum and in the colon a large diaphragm can usually be overcome; but the contents of the bowel in these regions team with bacteria, and the slightest contamination may produce a fatal peritonitis. The dominating principle in surgery of the lower ileum and the colon should be to avoid the slightest contamination of the surrounding tissue with the contents of the bowel. In resection of the lower ileum and of the colon, it is also important to have quick union so that the fecal matter will not have access to any raw surface longer than necessary, else late infection and an abscess may occur.

Returning to the duodenum, the ulcers that are so common in its first portion usually call for surgery of the stomach as well as of the duodenum. It was formerly the general practice to do a gastro-enterostomy for all duodenal ulcers. When the tissues are extensively infiltrated around the ulcer, and the wall of the bowel will not hold sutures well, gastro-enterostomy is a satisfactory procedure because such an ulcer is often followed by stenosis, and with stenosis at the pylorus gastro-enterostomy gives excellent results. As I have pointed out elsewhere,[6] this is probably due to the fact that the stenosis which gives no exit to the acid gastric juice through the pylorus permits the alkaline content of the duodenum to be at its maximum, and the jujunal mucosa is thus protected from the acid of the stomach because the acid is quickly neutralized by the highly alkaline content of the duodenum. The great muscular activity of the pyloric end of the stomach doubtless affects the healing of an adjacent duodenal ulcer or of a wound in the first part of the duodenum, just as the activity of the sphincter ani retards the healing of an ulcer or wound in the anus. Division of the pyloric sphincter and of the pyloric canal, which is an adjuvant sphincter 1¼ inches in length, seems to be indicated in many duodenal ulcers. The incision for this division should never extend farther into the duodenum than 1 inch, and the incision in the stomach should be at least double that in the duodenum.[7] In this way, little of the duodenum is cut, and the incision is placed chiefly in the thick musculature of the stomach, whose action it is intended to restrain at least temporarily in order to give physiologic rest.

Simple excision, when the duodenal ulcer is more than an inch from the pylorus, is a satisfactory procedure. Care should be taken to avoid adhesions to the gallbladder and the surrounding fixed tissues. A tag of gastrocolic omentum or any peritoneum-covered fat with free motion may with advantage be sutured over the wound.

An occasional cause of complaint that may closely resemble symptoms of duodenal or gastric ulcer is partial obstruction at the terminal duodenum where it penetrates the transverse mesocolon to become the jejunum. This has been particularly noted in thin patients in whom the weight of the cecum and ascending colon is transmitted to the transverse mesocolon, producing compression of the terminal duodenum. The condition has been treated medically by posture, by abdominal belts and by diets that will promote the formation of fat and so give a more substantial support to the ascending colon. Surgically, it has even been recommended to resect the cecum and ascending colon to relieve the pressure, which seems rather a radical procedure. Occasionally there may be constricting bands that can be divided, but usually the obstruction is in such close proximity to the large vessels of the mesenteric arteries and veins that an extensive freeing of constrictions in this region may be dangerous. Then, too, bands that are merely divided often recur.

A very satisfactory operation for this condition is a lateral anastomosis of the duodenum to the jejunum. Particular attention has been called to this operation by W. A. Downes of New York. The technic is not difficult, because, whenever this procedure is indicated, the duodenum is greatly dilated. It bulges through the mesocolon, and when the transverse colon is lifted, becomes very obvious. A loop of jejunum about 8 inches from its origin is brought over. It is important that the attachments of the jejunum should not be put on any tension, for there should be no kink. It is not necessary in every instance to divide the transverse mesocolon. The loop of jejunum that is approximated laterally to the duodenum is fastened at two points about 2 inches apart, with two mattress sutures of 00 tanned catgut. The duodenum and jejunum are then united with a continuous suture of 00 tanned

5. Dragstedt, C. A.: Acute Dilatation of the Stomach, J. A. M. A. 79: 612-615 (Aug. 19) 1922.

6. Horsley, J. S.: Clinics and Collected Papers of St. Elizabeth's Hospital, St. Louis, C. V. Mosby Company, 1923, pp. 177-179; Some Underlying Principles of Gastric and Intestinal Surgery, Ann. Surg. 73: 199-210 (Feb.) 1921; Operative Surgery, St. Louis, C. V. Mosby Company, 1921, pp. 564-565.

7. Horsley, J. S.: Operative Surgery, pp. 552-553; The Choice of Operations for Gastric and Duodenal Ulcers, J. A. M. A. 81: 916 (Sept. 15) 1922, Fig. 10.

catgut. The tissues are packed around, and an incision one-half inch long is made in the duodenum. The contents are removed with a suction apparatus. The incision, about one-third inch from the suture line, is extended with scissors until it is 2 inches in length. The bleeding points are carefully clamped. The jejunum is similarly incised. The margins of the wound in the duodenum are united to the margins of the wound in the jujunum with a continuous lockstitch of tanned catgut, no effort being made to invert the tissues anteriorly. The outer row of sutures is then continued anteriorly after the manner of a gastroenterostomy. I have done this operation in five cases with no fatalities, and in four of them the results were entirely satisfactory at the last report.

This operation is free from objection on a physiologic ground. The two loops of bowel that are anastomosed both normally carry alkaline contents. There is no blind pocket, as would be in a complete lateral anastomosis, and some of the contents of the duodenum may pursue the normal route, while most of the food can readily gain exit through the anastomotic opening. Then, too, there is not the danger of injuring large blood vessels that there would be with an operation around the terminal duodenum.

The union of the upper jejunum after resection, as of the rest of the bowel, should be end-to-end. Cannon and Murphy [8] have shown the disadvantages of the lateral intestinal anastomosis, though there may be some instances, when the lumen of the bowel is small and the mesentery is fat, in which this type of union is indicated. The action of the circular muscle is destroyed by the incision in this operation, and the column of food within the lateral anastomosis must be shoved through the site of the anastomosis by the peristalsis of the intact circular muscular fibers on the oral side. If there is a blind pocket on the oral side, fecal material accumulates in it and disastrous results may occur. It is essential to make the incision in a lateral anastomosis as close to the blind end as possible, so as to avoid pocketing.

The technic for union of the upper jejunum after resection has been fully described elsewhere.[9] Briefly, the bowel is clamped with soft bladed forceps about 3 or 4 inches from the point of proposed resection. The mesentery is clamped, divided and ligated in sections. The triangular space where the mesentery separates to envelop the intestine is carefully tied, and the portion of intestine that is to be resected is clamped. All the ligatures and sutures on the mesentery should be applied before the lumen of the bowel is opened. The detached loop is clamped at the line of resection, packed around with moist gauze, and divided somewhat obliquely from the mesenteric border outward. The ends of the bowel are cleaned with moist, antiseptic gauze. The bowel is approximated with a continuous mattress stitch of linen or silk, which begins on the mucosa about one-fourth inch from the mesenteric border of the bowel, is carried across from the right to the left end of the bowel, and penetrates the left end from the peritoneal surface about one-half inch from the mesenteric junction. It returns in a reverse direction and is tied. The suture is carried back and forth as a mattress suture and is drawn snugly. It is important not to have the two stumps of the mesenteric border opposite each other, but they should be side by side so as to provide full peritoneal covering on at least one side. After about one third of the circumference of the bowel has been sutured, the needle is thrust through from the inner surface to the peritoneum. One backstitch is taken to lock this segment of the sutures. The mucosa of this sutured third of the bowel may then be lightly whipped over with small catgut or silk, in order to cover the stumps of the mesenteric border. The original suture is continued as a right-angle continuous suture, penetrating all coats and turning in not more than one-fourth inch of the margin of the bowel. After every two or three stitches, a backstitch is taken. It is important to approximate the intestinal surfaces accurately, and yet not draw them together too tightly. When the original starting point is reached, an extra backstitch is made and then a bite is taken on the left end of the bowel and the suture is tied to the original end. The knot is tied several times and the thread is cut short, when the knot should sink into the lumen. If it does not, a single interrupted suture may be applied. In this way, by carefully observing the amount of diaphragm turned in and by taking a blackstitch every few stitches, one may avoid constriction of the lumen by the sutures.

SURGERY OF LOWER ILEUM AND COLON

In the lower ileum and colon, the importance of a wide lumen and a small diaphragm is not so great, but the avoidance of contamination of tissues with the septic fecal contents looms up as the chief problem. Here the operation of Kerr [10] gives great satisfaction. The principle of this operation is that the lumen of the bowel is sealed throughout the procedure and there is no opportunity for contamination by the contents of the bowel. After the mesentery has been divided and tied, as in the previously described operation, the bowel is doubly clamped at each point of proposed resection. The clamps are placed as closely as possible together. Small Payr clamps are excellent, or the new clamps devised by R. A. Barr of Nashville, Tenn., seem satisfactory, as they hold firmly a very narrow margin of the bowel in their grip. It is well to place the clamps in a somewhat different plane at each end of the intestinal stumps, so that the mesenteric borders will not be apposed to each other. However, as the mesenteric border is sealed and cauterized, there is no great danger of infection here. The bowel is severed with the electric cautery between the two clamps on each side of the proposed resection, and the stump is further cauterized. A basting suture is taken over the clamp, the first stitch being parallel with the axis of the bowel, and others being taken parallel with the clamp, and as close to the clamp as possible. The last suture is taken in the direction of the lumen of the bowel. In my experience, No. 0 tanned catgut is a very satisfactory suture for this, because it has little friction and does not tend to kink. The two ends of this suture are pulled on in the axis of the clamp, while the clamp is gradually removed. In this way the stump is completely inverted. The bowel stumps are brought together, while the ends of the basting suture are held taut in hemostats close to the bowel. The intestine is sutured with a continuous mattress suture of linen or silk, securing snug approximation. When the row of sutures has been completed and tied, the two basting threads are removed. The bowel is then invaginated with the finger and thumb in order to separate the intestinal walls that have been agglutinated by the pressure of the clamps.

8. Cannon, W. B., and Murphy, F. T.: The Movements of the Stomach and Intestines in Some Surgical Conditions, Ann. Surg. **43**: 519-520, 1906.
9. Horsley, J. S.: Operative Surgery, pp. 603-610.
10. Kerr, H. H.: The Development of Intestinal Surgery, J. A. M. A. **81**: 641-647 (Aug. 25) 1923.

This technic can be modified, as Kerr has pointed out. In the resection of the cecum and ascending colon, the line of sutures may be taken somewhat farther back on the ileum than on the colon. An inch of ileum can be inverted into the colon, so simulating the ileocecal valve.

Since July, 1923, I have done three resections of the colon by this technic. The recovery in each case has been satisfactory. The chief advantage of this method, as has already been mentioned, is the avoidance of contamination of the tissues by the bowel contents at the time of operation. Another advantage, however, is that the invaginated end of each bowel is not only clamped and devitalized, but cauterized. This leaves an eschar, much as the clamp and cautery operation for hemorrhoids would leave, and the granulations which form beneath the eschar are not in contact with the fecal contents until some days after the operation when the eschar has been separated. In the usual technic in which a raw margin is turned in, this raw surface is unprotected, and even if the tissues have not become contaminated at the time of operation, the possibility of absorption of septic material from the fecal current by the raw inverted margin of the bowel is something to be considered. It may be possible that such absorption is one of the reasons why resection of the colon is frequently followed by an abscess.

The technic of resection of the terminal sigmoid or upper rectum should usually be a combined operation, both abdominal and perineal. The lower sigmoid is prepared by dividing the peritoneum and ligating the mesenteric vessels. Finally, the sigmoid is doubly clamped and divided as in the Kerr method for resection. The lower end is pushed into the pelvis and covered with a diaphragm of peritoneum, and the upper end is brought out as an artificial anus. In this way there is a minimum opportunity for contamination. The abdomen is closed, and the operation is completed from below, either at the same stage, or later on.

In resections involving the colon and the lower ileum there is a tendency for gas formation, and the consequent stretching of the sutures interferes with healing. In order to avoid this and to give physiologic rest, I perform an enterostomy after resection of the colon. This is usually done in the lower ileum about 4 inches from the cecum, but never nearer than 4 or 5 inches to the line of resection, and is the last step in the resection. After the intestine has been clamped, an incision about 2 inches long is made down to the mucosa; a purse-string suture of linen is inserted at the distal end of the incision, and is held up while the mucosa in the grasp of the suture is perforated. A medium-sized soft rubber catheter with an extra perforation at its tip and two perforations about 5 inches from its tip is inserted, and the purse-string suture is quickly tied just distal to the perforations, about the middle of the catheter. The purse-string suture then transfixes the catheter, is again tied, and is cut short. The catheter is laid on the bed of the mucosa and buried with a continuous suture of linen or silk. If the terminal ileum and cecum can be reached from the abdominal incision through which the resection is made, the catheter may be passed through a stab wound in the right iliac fossa and the distal end clamped, and then it is inserted in the enterostomy as described. In this way there will be no chance of contamination by passing the catheter through the abdominal wound after it has been placed in the bowel. The enterostomy wound is brought snugly against the parietal peritoneum where the catherer emerges, and is preferably fastened to the parietal peritoneum by one or two fine catgut sutures. If the omentum is readily available, it may be tucked around the enterostomy, but this is not essential.

Patients in whom the colon has been resected make a much smoother convalescence when this enterostomy is done. By incising down to the mucosa, after the principle of Coffey, one forms an oblique channel which is not lined with peritoneum, and the mucosa acts as a satisfactory valve. The channel is not so rigid as if the whole thickness of the bowel including the peritoneum were used, as in the Witzel method, for here the peritoneum throws out an exudate.

In about two thirds of the cases when this enterostomy is done, the catheter can be easily removed in a week or ten days, and no fecal matter will follow. In the instances in which fecal drainage does occur, it drains for only a few days, and the wound readily closes. Such a procedure can be quickly performed, gives physiologic rest to the sutured intestine, carries comparatively little risk, and is not objectionable to the patient. The liquid fecal contents of the small bowel gain exit through a soft rubber catheter about as readily as through a large tube, and of course the gas is easily expelled.

The operations here described are based on biologic principles and utilize these principles in an effort to eliminate danger as much as possible, and to restore function as nearly to normal as can be done. There are other technics in intestinal surgery which time does not permit me to consider, but these illustrate the manner in which mechanical technic should be based on biologic principles.

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BLOOD REACTION IN ETHYLENE AND NITROUS OXID ANESTHESIA*

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The most noteworthy recent event in the development of anesthesia has been the revival of interest in ethylene as an anesthetic agent. This has occurred as a result of the experiments undertaken by Luckhardt and Carter,[1] which were independently confirmed by Brown,[2] and through the favorable clinical reports of the gas as a general anesthetic when used with oxygen, as noted by Luckhardt and Carter,[3] Luckhardt and Lewis,[4] and Lundy.[5]

In comparing ethylene with ether as a general anesthetic, one is immediately struck with the more favorable postanesthetic condition under ethylene. Luckhardt and Lewis [4] report prompt recovery in every instance under ethylene-oxygen, and postoperative vomiting in only 30.2 per cent. of a large series of cases; while, in a comparable series under ether, the postoperative vom-

* From the Laboratories of Pharmacology and Physiological Chemistry of the University of Wisconsin Medical School.

1. Luckhardt, A. B., and Carter, J. B.: The Physiologic Effects of Ethylene, a New Gas Anesthetic, J. A. M. A. **80**: 765 (March 17) 1923.
2. Brown, W. E.: Preliminary Report of Experiments with Ethylene as a General Anesthetic, Canadian M. A. J., March, 1923, quoted by Luckhardt and Lewis (Footnote 4). Brown, W. E., and Henderson, V. E.: On Ethylene as an Anesthetic, Arch. Int. Pharm. Ther. **28**: 257, 1923.
3. Luckhardt, A. B., and Carter, J. B.: Ethylene as a Gas Anesthetic, Preliminary Communication, J. A. M. A. **80**: 1440 (May 19) 1923.
4. Luckhardt, A. B., and Lewis, Dean: Clinical Experiences with Ethylene-Oxygen Anesthesia, J. A. M. A. **81**: 1851 (Dec. 1) 1923.
5. Lundy, J. S.: Ethylene and Oxygen as an Anesthetic for Infants, J. A. M. A. **82**: 448 (Feb. 9) 1924.

iting followed in 76.6 per cent. of the patients. So far, no untoward effects following ethylene have been reported.

These considerations prompted us to investigate the blood reaction in ethylene anesthesia, in order to ascertain whether any difference existed between the action of this agent on the acid-base equilibrium of blood and the now well recognized acidotic effect of ether, since the postanesthetic complications following ether may be a consequence, in many respects, of the marked changes in the blood reaction. With regard to ether, it has been shown by Van Slyke, Austin and Cullen [6] that the p_H of blood falls at once, or within a short time after anesthesia is begun, and that no rise of the p_H ever takes place under this anesthetic. "A true acidosis occurs with increase of the hydrogen ion concentration of the blood and fall of the alkali reserve, due either to introduction of acid into the blood or to withdrawal of base from it." Leake, Leake, and Koehler [7] confirmed this observation, and noted that the acidosis develops independently of respiratory activities, and is not, therefore, related to a possible acapnia. These authors also showed that the acidosis is more probably due to a loss of base from the blood than to the entrance of acid into it, since they could find no significant increase in the acetone bodies of blood during prolonged ether anesthesia. Cullen, Austin, Kornblum and Robinson [8] found that the larger part of the fall in alkali reserve under ether and chloroform occurs during the first few minutes of anesthesia, and that the association of this with the immediate fall in the p_H, also noted, suggests an uncompensated acidosis, and not a compensated alkalosis. These reports are the more recent in a large series of independent observations indicating the development of a severe uncompensated acidosis under ether anesthesia. Gross,[9] working in the physiologic laboratory of the University of Wisconsin, has confirmed the observations of Leake, Leake and Koehler [7] that the acetone bodies do not tend to increase in either ether or chloroform anesthesia, and has found likewise that there is no significant rise in the lactic acid content of blood in these conditions.

EXPERIMENTAL

Large dogs were used in order that the blood loss might have a minimal effect on the results obtained. The ethylene used was a commercial product contained in a gas cylinder suitable for use in a nitrous oxid apparatus. A Teter nitrous oxid apparatus was used, with a special face mask suitable for use on dogs and fitted with a flutter valve for the expulsion of expired gases. The concentration of anesthetic gas and oxygen were estimated by the rate of flow from reservoir bags before admission to the mixing chamber.

Blood was drawn from the femoral artery through the intact skin into a clean and dry syringe, and transferred under oil to suitable containers holding just enough potassium oxalate solution to prevent coagulation. Aseptic measures and care were used to prevent the occurrence of hemorrhages. The p_H was determined electrometrically on whole arterial blood, use being made of the special apparatus devised by Dr. A. E. Koehler, and as yet only partially described.[10] The carbon dioxid content, the oxygen content and the oxygen capacity were determined in the Van Slyke apparatus.[11] About 15 c.c. of blood was drawn at a time, so that duplicate determinations were made in all cases except the oxygen capacity.

RESULTS WITH ETHYLENE-OXYGEN

Anesthesia with ethylene-oxygen could be induced with ease and rapidity, and usually with concentrations of ethylene below 85 per cent. Analgesia preceded anesthesia by one or two minutes, but anesthesia was usually attained within three minutes. At no time was struggling or excitement observed during the period of induction. Respiration remained remarkably constant in depth and rate, while the pulse rate tended to rise during the first few minutes. The pupils dilated during induction. The corneal reflex was the last to disappear, and then only in deep anesthesia. Salivation occurred in one case during anesthesia. The sphincters were relaxed in only one case, during the period of recovery. Recovery was prompt in all cases. No indications of nausea were observed in any animals during induction or after the anesthesia. Within three minutes after the mask had been removed and the dogs placed on the floor, they usually began to play about as normally.

TABLE 1.—*Effects of Ethylene-Oxygen Anesthesia on the Blood Reaction in Dogs* *

Dog and Time	p_H	Carbon Dioxid Content, per Cent. by Volume	Oxygen Saturation, per Cent.	Ethylene: Oxygen Concentration, per Cent.	Pulse per Minute	Respiration per Minute
1. Normal.....	7.332	40.0	95.7	.....	108	36
12 minutes under anesthesia.....	7.329	39.3	92.6	85 : 15	122	30
2. Normal.....	7.364	36.7	96.3	.....	112	20
10 minutes under anesthesia.....	7.420	32.2	86.3	90 : 10	132	20
4. Normal.....	7.336	31.9	95.8	.....	104	28
15 minutes under anesthesia.....	7.468	31.9	85.2	90 : 10	116	24
30 minutes under anesthesia.....	7.222	27.0	84.3	90 : 10	108	28
5. Normal.....	7.466	36.7	96.5	.....	120	32
12 minutes under anesthesia.....	7.395	35.2	93.8	85 : 15	120	24
30 minutes under anesthesia.....	7.383	29.0	95.1	80 : 20	120	26
6. Normal.....	7.408	35.1	94.6	.....	120	28
15 minutes under anesthesia.....	7.481	38.6	87.1	90 : 10	132	30
40 minutes under anesthesia.....	7.356	41.4	90.3	80 : 20	132	22
7. Normal.....	7.414	42.0	95.1	.....	118	28
15 minutes under anesthesia.....	7.650	24.7	80.3	95 : 5	108	16
40 minutes under anesthesia.....	7.357	27.7	93.2	80 : 20	120	24
8. Normal.....	7.372	43.9	94.2	.....	108	24
15 minutes under anesthesia.....	7.359	43.4	98.7	85 : 15	102	24
50 minutes under anesthesia.....	7.286	29.8	91.4	85 : 15	108	22

* Blood taken from femoral artery.

The effects of ethylene-oxygen anesthesia on the blood reaction were roughly related to the degree of anoxemia, as may be seen from the data presented in Table 1. If no anoxemia was present, as in Dogs 1, 5 and 8, the p_H tended to fall slightly, but remained within normal limits during the time of observation. The carbon dioxid content also tended to fall, but not beyond the normal range for arterial blood. If anoxemia was present, as in Dogs 2, 4, 6 and 7, there appeared to be an initial mobilization of alkali in the blood, since the p_H rose slightly, while the carbon dioxid content, except in Dog 7, did not show much change. Following this initial rise in the p_H, there was an apparent tendency

6. Van Slyke, D. D.; Austin, J. H., and Cullen, G. E.: The Effects of Ether Anesthesia on the Acid-Base Balance of the Blood, J. Biol. Chem. **53**: 277 (Aug.) 1922.
7. Leake, C. D.; Leake, E. W., and Koehler, A. E.: The Acidosis of Ether Anesthesia in the Dog, J. Biol. Chem. **56**: 319 (June) 1923.
8. Cullen, G. E.; Austin, J. H.; Kornblum, K., and Robinson, H. W.: The Initial Acidosis in Anesthesia, J. Biol. Chem. **56**: 625 (June) 1923.
9. Gross, E. G.: Personal communication to the authors.
10. Koehler, A. E.: A New 0.1 N Calomel Electrode Design, J. Biol. Chem. **41**: 619 (April) 1920.
11. Van Slyke, D. D., and Stadie, W. C.: The Determination of the Gases of the Blood, J. Biol. Chem. **49**: 1 (Nov.) 1921.

toward a more acid condition in the blood, as shown both by the p_H changes and by the alterations in the carbon dioxid content. The experiments were not prolonged sufficiently to ascertain to what extent this tendency might develop.

RESULTS WITH NITROUS OXID AND OXYGEN

Under nitrous oxid and oxygen, it is impossible to obtain true anesthesia without some degree of anoxemia. The effects of this anesthetic combination on the blood reaction, as may be seen from the data in Table 2, were very similar to those observed under ethylene-oxygen if anoxemia was present; that is, an initial increase in the p_H, with inconstant changes in the carbon dioxid content, followed by a fall in both the p_H and the carbon dioxid content, indicating a tendency toward an uncompensated acidosis. This tendency, of course, was not in any way comparable to the rapid and marked development of an uncompensated acidosis under ether.

These findings agree with those noted by Cullen, Austin, Kornblum and Robinson [8] for nitrous oxid and oxygen. They found quite comparable changes when nitrogen was substituted for nitrous oxid in the same concentrations, indicating that the effect was due to the

TABLE 2.—*Effects of Nitrous Oxid and Oxygen Anesthesia on the Blood Reaction in Dogs* *

Dog and Time	p_H	Carbon Dioxid Content, per Cent. by Volume	Oxygen Saturation, per Cent.	Nitrous Oxid Concentration, per Cent.	Pulse per Minute	Respiration per Minute
9. Normal.....	7.395	32.4	96.1	.....	112	30
15 minutes under anesthesia.....	7.538	43.8	82.3	90 : 10	132	36
30 minutes under anesthesia.....	7.282	29.1	84.1	90 : 10	140	42
10. Normal.....	7.411	40.5	92.8	.....	118	16
10 minutes under anesthesia.....	7.457	33.2	84.2	90 : 10	112	30
20 minutes under anesthesia.....	7.338	30.1	86.5	90 : 10	122	30
11. Normal.....	7.490	34.7	96.2	.....	116	28
10 minutes under anesthesia.....	7.550	31.1	80.8	95 : 5	132	18
25 minutes under anesthesia.....	7.298	28.8	90.5	85 : 15	126	30

* Blood taken from femoral artery.

oxygen lack. This type of response in blood reaction to an anesthetic anoxemia is very similar to that noted by Koehler, Brunquist and Loevenhart [12] in animals breathing an atmosphere low in oxygen, except that it is perhaps more acute. It is the opinion of Loevenhart and his associates that the initial alkalosis in anoxemia is due to the loss of carbon dioxid from the blood, but in two of our animals, Dog 6 under ethylene-oxygen, and Dog 9 under nitrous oxid and oxygen, there was an initial alkalosis, even though the carbon dioxid content rose.

RESULTS WITH ACETYLENE-OXYGEN

We conducted several experiments, using acetylene-oxygen as the anesthetic mixture. An ordinary Prest-o-Lite tank charged with acetylene was connected by pressure tubing to a brass adapter fitting the intake valve of the Teter nitrous oxid apparatus, and the concentration of acetylene was estimated by the rate of flow from a reservoir bag to the mixing chamber. Oil of spearmint in alcohol was dropped into the mixing chamber to hide the odor.

We found that a very satisfactory anesthesia could be maintained with a concentration of 50 per cent. acetylene and 50 per cent. oxygen. Induction was rapid, and was unaccompanied by excitement. Respiration remained very constant in depth and rate, and the pulse was not so greatly affected as under ethylene. Relaxation of the abdominal musculature was perhaps better than with ethylene, although the sphincters did not relax. Profuse salivation occurred in one animal. Recovery was not so prompt as under ethylene, although there were no indications of nausea.

It was impossible to study the blood reaction under acetylene-oxygen anesthesia by electrometric methods. Being an unsaturated hydrocarbon, and present in such large amounts in blood during anesthesia, the acetylene absorbed so much hydrogen in the hydrogen electrode containing the blood sample that no equilibrium could be reached for measurement. The carbon dioxid content, however, did not show so great fluctuations as under ethylene. From the point of view of oxygen supply, acetylene should be preferable even to ethylene, since an anoxemia could not develop with the concentrations necessary for anesthesia. The clinical reports of the use of acetylene are so favorable [13] that it is desirable that more study be given to the anesthetic properties of this substance.

COMMENT

Blood reaction is intimately related to oxidative processes; and, whenever these are disturbed, changes in the acid-base equilibrium may be expected to follow. An anoxemia of the anoxic type, as defined by Barcroft,[14] may therefore be expected to lead to rapid changes in the blood reaction, although not all the factors involved in the process are yet apparent, nor is there agreement as to their relative importance.

An oxygen saturation of more than 92 per cent. may be considered within the normal range for blood from the femoral artery, while below this one may consider anoxemia present. Under nitrous oxid and oxygen it is impossible to maintain satisfactory anesthesia without some degree of anoxemia, and the effects of this anesthetic mixture on the acid-base balance may be attributed to this anoxic factor. An indifferent gas used in the same concentration as nitrous oxid, with oxygen, may then be expected to have a similar effect on the blood reaction, and Cullen, Austin, Kornblum and Robinson [8] found this to be the case. In the reverse situation, Wieland [15] has shown that phenomena of life not dependent on oxygen are no more affected by nitrous oxid than by an indifferent gas. From this he infers that the narcotic effects of nitrous oxid are associated with disturbed oxygen absorption or utilization in the central nervous system. This, then, may become a contributing factor in affecting blood reaction. Wieland [15] goes on to note that in many ways the action of acetylene resembles that of nitrous oxid, but acetylene is the more active, so that even in the presence of considerable amounts of oxygen it is still effective. The mechanism by which the oxidative processes of the central nervous system are deranged by the inhalation of nitrous oxid and similar gases, of course, is not clear.

With ethylene, if sufficient oxygen is present to keep the oxygen saturation of arterial blood within normal limits, no marked effects on the blood reaction may be expected beyond those which may secondarily arise through the narcotizing action resulting from deranged

12. Koehler, A. E.; Brunquist, E. H., and Loevenhart, A. S.: The Production of Acidosis by Anoxemia, Proc. Am. Soc. Biol. Chem., Dec. 27-29, 1922, J. Biol. Chem. **55**: ix, 1923.

13. Horwitz, C. H. S.: A New General Anesthetic, Lancet **1**: 619 (March 24) 1923. Gauss, C. J., and Wieland, H.: Ein neues Betäubungsverfahren, Klin. Wchnschr. **2**: 113, 158, 1923.

14. Barcroft, J.: Anoxemia, Lancet **2**: 485 (Sept. 4) 1920.

15. Wieland, H.: Ueber den Wirkungsmechanismus betäubender Gase, des Stickoxyduls und des Azetylens, Arch. f. exper. Path. u. Pharmakol. **92**: 96 (Feb.) 1922.

oxygen absorption or utilization in the central nervous system. On the other hand, if it is necessary to administer ethylene in such concentrations that an anoxic anoxemia develops, primary changes in the blood reaction resulting from this may be expected to follow along the paths suggested by Koehler, Brunquist and Loevenhart [12] for anoxemia in general, and as shown by Cullen, Austin, Kornblum and Robinson [8] for nitrous oxid anoxemia.

It would be interesting clinically to note whether or not the patients who suffer from postanesthetic nausea and vomiting after ethylene-oxygen are those who show anoxemia and blood reaction changes during the anesthetic period.

More detailed and complete experimentation is necessary before the exact effects of nitrous oxid and ethylene on blood reaction can be summarized with accuracy, but it is at least plain from this preliminary study that these anesthetic agents do not in any way influence the acid-base equilibrium of blood so rapidly or so markedly as do ether and chloroform.

SUMMARY

The effects of ethylene-oxygen anesthesia on the blood reaction seem to be related to the degree of anoxemia present. If there is no anoxemia, the p_H and carbon dioxid content of arterial blood tend to fall slightly, but not beyond normal limits, within half an hour's anesthesia. If anoxemia is present, there is an initial increase in the arterial p_H, with inconstant changes in the carbon dioxid content. This alkalotic tendency may persist for from fifteen to thirty minutes, depending on the degree of anoxemia, and is followed by a fall in both the p_H and the carbon dioxid content.

It is impossible to maintain anesthesia under nitrous oxid and oxygen without some anoxemia. The changes in the blood reaction are similar to those noted under ethylene-oxygen anesthesia when accompanied by anoxemia.

Neither ethylene nor nitrous oxid, when used as anesthetic agents with oxygen, influences the blood reaction so markedly or so rapidly as does ether or chloroform.

THE MORTALITY OF SURGICAL COMPLICATIONS IN DIABETES

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The discovery of insulin has opened a new era in the treatment of diabetes. While not supplanting the older method of treatment—that of diet—it has proved itself an invaluable aid in allowing the use of a more liberal diet and in tiding patients over the various crises to which diabetic patients are liable. High on the list of these crises stands any surgical condition that may complicate the disease. Diabetic patients have long been recognized as extremely poor surgical risks, and the mortality, no matter what the surgical condition, has always been high. I believe that insulin, however, will reduce this mortality to a great extent, and the small series of cases here presented would tend to bear out that belief.

It is too early in our use of the drug to determine whether or not insulin will reduce the occurrence of certain surgical conditions that are strictly complications of the disease, such as diabetic ulcers and gangrene, and carbuncles, though this is a possibility. With the idea in mind of establishing a mortality base line from which to work, I have compiled the surgical complications of diabetes that have been treated at the New York Hospital [1] in the last twenty-five years, from 1897 to 1922 inclusive, and have added to these the small series of cases in the latter part of 1922 and during the year 1923 which have had the advantage of the use of insulin.

From 1897 to 1922 there were 160 diabetic patients admitted to the wards. Of this number there were seventy-four men and eighty-six women. The ages ranged from 20 to 81 years, the majority of the patients being between 40 and 60.

Number of Patients According to Decade

Decade	Number of Patients
From 20 to 30	4
From 30 to 40	13
From 40 to 50	42
From 50 to 60	64
From 60 to 70	31
From 70 to 80	5
From 80 to 90	1

The duration of their diabetes is hard to arrive at, as 108 were not aware of its presence until seeking treatment for their surgical condition. The other fifty-two gave histories of diabetes extending from a few months to as long as twenty years.

No conclusions as regards nationality affected are possible, as this has changed greatly with the change in the population of the city itself. Twenty-five years ago a majority of our patients came from Germany and Ireland. Today most are of Jewish or Italian extraction.

The surgical complications run the gamut of all conditions occurring in a general surgical service. However, those conditions which are regarded as true complications of diabetes naturally come first. Thus, we have forty-five cases of gangrene of the toe, twenty-nine cases of cellulitis of some part of the body, nineteen cases of carbuncle, seven cases of ulcer of the foot, seven cases of ischiorectal abscess, and four cases of fistula in ano.

In the entire series of 160 such cases there were fifty-nine deaths, giving a mortality of 36.8 per cent. The mortality varies somewhat with the different methods of treatment that have been in vogue in the last quarter of a century. There were fifty patients who, because of their short stay in the hospital—or either mildness or severity of symptoms—were given no treatment for their diabetes. Of this number twenty died, giving a mortality of 40 per cent.

Sixty-nine patients were treated by some form of diet, and in this series eighteen died, giving a mortality of 26 per cent. Forty-one patients were treated by diet supplemented with sodium bicarbonate given as circumstances demanded, orally, subcutaneously or intravenously, and there were twenty-one deaths among this number, giving a mortality of 51 per cent. This list included many of the surgically more severe cases; hence the high death rate.

Of the total of fifty-nine deaths, it is fair to assume that a certain number occurred because of the surgical condition of the patients, not because of their diabetes. While recognizing the fallability of the process, an effort was made by careful study of the histories and

1. From 1897 to 1914, all the cases treated in the wards of the hospitals are included. From 1914 to 1922 only those treated in the service of Dr. C. L. Gibson, First (Cornell) Surgical Division, are included.

clinical records to pick out these cases and so arrive at a rough estimate of the true mortality caused by the diabetes itself. It was thought that this would give in a crude way the mortality to be expected, now that we have an efficient therapeutic agent in insulin with which to combat the diabetes.

I was able to select fourteen cases in which the patients appeared to have succumbed to their surgical condition only:

Strangulated umbilical hernia, in a woman, aged 62.

Gangrene of scrotum in two patients, aged 44 and 55 years.

Gangrene of foot in a woman, aged 48, who died suddenly before operation.

Fractured ribs in a man, aged 37, who died of erysipelas.

Retention of urine in a woman, aged 42, who died without operation.

Fracture of both ankles in a woman, aged 81, who developed gangrene of the foot, and died following amputation of the leg.

Fracture of the skull in two patients, a man, aged 35, and a woman, aged 56. No operation was performed in either case.

Hypertrophied prostate with cystitis, in a patient, aged 56. No operation was performed.

Cellulitis of the leg in a woman, aged 48, who died of cerebral hemorrhage thirty-six days after operation.

Gangrene of the foot in a woman, aged 54, who died of cerebral hemorrhage eighteen days after an operation.

Strangulated hernia in a woman, aged 53, who died after resection of 5 feet of intestine.

Echinococcus cyst of the liver in a man, aged 30, who died on the third day after operation. This case was probably not true diabetes, as sugar, acetone and diacetic acid did not appear until after operation, which consisted of dissecting a cyst off the head of the pancreas.

Excluding these fourteen cases, there would be a total of forty-five patients who seemed to die because of their diabetes, which our new method of treatment might have saved. In other words, the mortality of 36.8 per cent. should be reduced to 8.7 per cent., a reduction of 28.1 per cent.

PATIENTS TREATED WITH INSULIN

The twelve patients treated in the last eighteen months, who have had the benefit of insulin, represent too small a series to form a basis for definite conclusions; but they will serve roughly to indicate what may be expected. There were nine women and three men, ranging in age from 38 to 77. In this number there were two deaths, a mortality of 16.6 per cent., which, while not so low as the calculated expected mortality given above, still represents a reduction of more than 50 per cent. Both of these deaths can fairly be said to have been caused by the surgical condition rather than by the diabetes:

A man, aged 77, with gangrene of the leg necessitating amputation, died five hours after the operation.

A woman, aged 60, with empyema following pneumonia, died without an operation.

On the other hand, there have been three patients who, it would appear from the clinical course, would have died but for the insulin treatment:

A woman, aged 39, with a large carbuncle of the back, was in diabetic coma for twenty-four hours following operation, but made a complete recovery.

A woman, aged 47, with a deep abscess of the chest wall, a large bed sore and multiple arthritides, in a comatose condition for thirty-six hours, is still under treatment in the hospital, but is well on the road to recovery.

A woman, aged 40, with a strangulated umbilical hernia, was in coma for twenty-four hours following a radical operation for its cure. She later developed pneumonia. The wound became badly infected, and there was sloughing of a large amount of fat; but with the insulin treatment she was able to have an excision and a secondary closure of the wound, and was completely cured.

SUMMARY

In a series of 160 cases of diabetes with some surgical complication, there were fifty-nine deaths, a mortality of 36.8 per cent.

Of this number there were fourteen patients who, it would appear from their histories, would have died under any form of treatment. Thus, there were forty-five patients who might have been saved by insulin treatment.

In a small series of twelve cases treated with insulin, there were two deaths, a mortality of 16.6 per cent. Three patients would appear from the clinical course to owe their lives to insulin treatment.

71 West Twelfth Street.

ISOLATION OF DUCREY BACILLUS FROM THE SMEGMA OF THIRTY MEN

PRELIMINARY REPORT *

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CHICAGO

In 1889, Ducrey discovered the organism which now bears his name and stated that it was the specific cause of soft chancre. Since then, this work has been confirmed by many different workers so that at present practically all textbooks teach that chancroid is a venereal disease caused by the streptobacillus of Ducrey. There is, however, considerable difference of opinion among physicians regarding the specificity of this organism. The controversy seems to be dependent on several factors, the most important of which are the difficulty encountered in recovering the organism from the lesions, the impossibility of obtaining pure cultures, the atypical lesions produced after experimental inoculation, and the occurrence of venereal sores resembling chancroids in persons who have not been exposed to venereal disease.

During the last few years, much effort has been spent in developing a means to overcome the difficulties associated with the isolation and cultivation of the Ducrey bacillus. Probably the most noteworthy advance in this direction is the work of Teague and Deibert.[1] Their method is simple and, in our experience, has been satisfactory. The occurrence of genital sores resembling chancroids in persons who have not been exposed to venereal infection is, however, a matter difficult to explain, and we therefore carried out a series of experiments which we believe throws considerable light on these obscure cases. In this preliminary report I wish only to give briefly the data collected to date, most of which concerns the isolation and cultivation of gram-negative streptobacilli, resembling in every way the Ducrey bacillus, from the smegma of normal men.

Patients who came to the dispensary or to the hospital for treatment were carefully questioned as to their venereal history. If negative, they were examined, and only those having long, phimotic foreskins with a large accumulation of moist, foul-smelling smegma were chosen for further study. Most of the patients were

* Read before the Chicago Pathological Society, Feb. 11, 1924.

* From the Department of Pathology and Bacteriology, University of Illinois College of Medicine.

1. Teague, O., and Deibert, O.: J. M. Res. 43: 61-75 (Jan.-March) 1922.

colored men. With a sterile cotton swab the smegma was suspended in sterile physiologic sodium chlorid solution, and the tube thoroughly shaken. To date we have examined thirty such individuals.

In our work we used two kinds of culture mediums. For the preliminary culture to determine the presence of these organisms in the smegma we used the mediums described by Teague and Deibert, which consists of sterile, clotted rabbit blood drawn into narrow tubes and heated to 55 C. for five minutes. For the isolation of the organisms in pure culture from the preliminary culture, we inoculated blood agar plates consisting of one part of defibrinated human blood and six parts of infusion agar, titrated to a hydrogen ion concentration of 7.6.

Gram stains were made in all our work, with dilute carbolfuchsin as a counterstain.

Utilizing the idea that most workers have isolated pure colonies of this organism only after repeatedly inoculating a patient until the last ulcer produced yielded only the Ducrey bacillus, we tried to isolate the pure culture by making repeated subcultures on blood agar plates, avoiding as far as possible the transfer of colonies that did not resemble the Ducrey bacillus. This was done in the following manner. Two loopfuls of the salt solution suspension of smegma was inoculated into the serum of the freshly prepared rabbit blood mediums and cultivated at 37 C. for twenty-four hours. A loopful of serum was then drawn off and examined. If chains of gram-negative bacilli were seen, a second loopful was suspended in 3 c.c. of sterile physiologic sodium chlorid solution, and this mixture was streaked in varying dilutions on freshly prepared blood agar plates. Several plates were made from each culture and incubated forty-eight hours. From this point the procedure was simply one of removing suspicious looking colonies and making subcultures on blood agar. The heavy growth of other organisms, such as staphylococci, streptococci, diphtheroids and colon bacilli, caused great difficulty, and even made it impossible at times to recognize the colonies of Ducrey bacilli, of which there are always relatively few.

The chief cultural characteristics of this organism are to be observed on blood agar plates. Within twenty-four hours they appear as very fine, round, slightly elevated colonies having a mucoid appearance, somewhat milky and about the size of a pin point, with no change in the surrounding mediums. After forty-eight hours' incubation, the colonies are quite distinct and very characteristic. They appear on streaked plates as round, slightly elevated, translucent, almost transparent colonies about 0.25 mm. in diameter, and are surrounded by a zone of hemolysis about 2 mm. in diameter. The nature of the hemolysis is quite characteristic in that it is complete, the margin of the hemolytic zone is very irregular, and the degree of hemolysis becomes less complete as the periphery is reached. This gradually becomes more marked on the third or fourth day of culture. This characteristic of the Ducrey bacillus colonies has not received much attention, and many workers have stated that the growth produces no change in the surrounding medium; but our work confirms the statement of Teague and Deibert that there is a definite zone of hemolysis within three or four days. The color of the colonies is also quite characteristic. They appear milky, have a metallic sheen, and are very highly refractile. If the colonies are growing deep in the medium, the characteristics are much the same except that they are oval or cigar shaped instead of round. The morphologic characteristics of the organism are variable and depend on many factors. The type of medium and age of culture are of the utmost importance in this connection. The unusual degree of pleomorphism observed and the effect of temperature, type of medium, etc., cannot be detailed in this report. The most common form observed isolated from blood agar plates after forty-eight hours' culture occurs in small groups and short chains of bacilli whose ends are pointed. The individual bacillus measures from 0.6 to 1.5 micron long and from 0.3 to 0.5 micron wide. There may be from three to twenty or more bacilli in a single chain. Often, instead of having pointed ends, the bacilli have rounded ends and are constricted in the center, so that they have the appearance of diplococci. They appear much smaller when grown on blood agar than if cultivated on liquid mediums. From the latter type of medium the chains are longer and are interwoven with one another. The many pleomorphic forms observed will be described in detail in a later paper. The organisms are distinctly gram negative, and take dilute carbolfuchsin as a counterstain very well.

In discussing the incidence of this organism in the smegma of normal men, we must carefully keep in mind that all our cases were selected from a large number of persons. Only those with a large accumulation of foul smegma under a phimotic foreskin were chosen because, from previous experience, we found that circumcised or clean persons yield negative results. To date we have examined thirty men. Twenty-seven of these were colored. The organism was found in five.

We believe that the organisms that we have isolated from the smegma of normal men is identical with the Ducrey bacillus, since it conforms to the morphologic and cultural characteristics of the latter in every way. In association with Dr. A. F. Lash, we have recovered a similar organism from the cervix and clitoris of women having no genital sores. This work is at present incomplete and will be detailed later. The presence of this organism about the genitalia explains many heretofore unknown phases of chancroidal infection. Briefly, these may be thus enumerated:

Persons apparently normal may be carriers of the Ducrey bacillus.

A person need not necessarily acquire the disease during sexual intercourse with an infected partner.

The so-called mixed infection does not mean that the person was exposed to a partner who had both chancroid and chancre.

SUMMARY

A gram-negative streptobacillus having the morphologic and cultural characteristics of the Ducrey bacillus was isolated in pure culture from the smegma of normal men.

The organism was recovered from five of thirty men examined.

The isolation of this organism from normal men may explain many heretofore unknown phases of chancroidal infection.

Cardiac Murmurs.—The most common murmur after the systolic at the apex is the diastolic. The latter generally is a soft, blowing "diminuendo" murmur, following the second sound and ceasing before the first sound of the next cardiac cycle. This is generally limited to the apex and the neighborhood, and it generally disappears altogether after the usual rest in bed.—J. M. Gill: *Guy's Hosp. Rep.* **73**:413 (Oct.) 1923.

EFFECT OF INSULIN IN TREATMENT OF DIABETIC LIPEMIA WITH LIPEMIA RETINALIS

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Lipemia is characterized by an accumulation of fat in the blood. A moderate alimentary lipemia occurs after the ingestion of food, and only when it persists in spite of fasting is the condition to be considered pathologic. Patients with diabetes are predisposed to lipemia; and, even though the blood plasma may not appear milky, the lipoids are generally abnormally high, especially in the severe cases. The distribution of lipoids in the blood under pathologic conditions, especially diabetes, has been extensively studied by Bloor [1] and others. In the latter condition, high values for total blood lipoids have been reported by Bloor (13 gm. per hundred cubic centimeters of plasm), by Frugoni [2] (27 gm. per hundred cubic centimeters of plasm), and by Neisser and Derlin [3] (19.7 gm. per hundred cubic centimeters of plasm).

The treatment of lipemia has always been slow in yielding results. Allen,[4] feeling that blood fat originates from food fat, diminishes the amount of fat in the diet of patients with diabetes, while Newburgh and Marsh [5] advocate a high fat diet, which they assert, does not lead to an increase in blood fat. All workers agree that severe lipemia disappears slowly under dietary treatment. Thus, Geyelin reported a case, in which the plasma had the consistency of thick cream, which required two months' treatment that the plasma might be cleared of visible fat. The extraordinary results that have followed the use of insulin in the treatment of diabetes suggest that possibly this substance may also be effective in reducing the blood lipoids of diabetic patients to the normal value. As far as we can ascertin, only two reports have been made on the effect of insulin in lipemia. Gray [6] treated two cases of lipemia retinalis with insulin, and reports that the lipemia disappeared within a month's time. McCann [7] reports a case of lipemia retinalis which was also treated with insulin. In my opinjon the case I report is more severe than any of those heretofore treated with insulin. The opportunity was recently afforded me of observing a case similar to those studied by Gray, and the results show that the severe lipemia responds but slowly to the insulin treatment.

REPORT OF CASE

C. V., a girl, aged 15, referred by Dr. C. D. Harry of Stockton, June 26, 1923, had developed diabetes rather suddenly about two months previously, and the first symptoms were those of weakness, tiredness, increased thirst and urination. She had lost 18 pounds (8 kg.), and for the period of a month had been drowsy in the afternoons. She had marked polyuria, polydipsia, polyphagia and an excessively dry mouth. She also complained of cramps in the legs in the early mornings. For many days she had been unable to read because of blurred and hazy vision, and menstruation had been absent for two months. There had been no diabetes in the family. At the time of diagnosis she had not been dieted except in a slight way for the previous three days. The patient was weak, exhausted and drowsy. Her skin and hair were very dry. Ophthalmoscopic examination revealed a startling picture. Across the retina in all directions were seen creamy bands instead of the usual blood vessels, and the retina appeared grayish instead of red, as in the normal. The blood drawn for the estimation of blood sugar and carbon dioxid was a light brown fluid, and on separation of the plasma a thick, gelatinous, creamy plasma was obtained. One wonders how this fatty fluid could circulate through the fine capillaries. The interference of vision was due to the lipemia retinalis.

Findings in the Case Reported

	Carbohydrate	Protein	Fat	Insulin	Blood Carbon Dioxid, per Cent. by Volume	Blood Sugar, per Cent.	Blood Lipoids: Fatty Acid, per Cent.	Blood Lipoids: Cholesterol, per Cent.	Appearance of Plasma	Urine Sugar, per Cent.	Diacetic Acid	Ammonia, Gm.
June 26	..	..	..	.....	....	0.252	....	....	Thick, creamy and gelatinous	4.4	++	...
June 27	60	45	0	20 H	27.1	0.191	....	....	Thick, creamy and gelatinous	5.3	+	2.5
June 29	60	45	0	35 H	48.1	0.198	....	....	Thick, creamy and gelatinous	32.0	0	1.8
June 30	60	45	0	30 H	....	0.198	....	....	Thick, creamy and gelatinous	31.0	0	1.0
July 1	60	45	36	30 H	51.9	0.234	....	....	Thick, creamy and gelatinous	10.0	0	0.9
July 3	60	45	75	30 H	....	0.152	13.6, 13.8	1.48	Thick, creamy and gelatinous	0	0	0.6
July 4	60	45	75	25 H	....	.....	....	....	Thick, creamy and gelatinous	...	...	...
July 6	60	45	75	25 H	55.7	0.101	8.4	1.02	Milky, creamy	...	...	...
July 8	60	45	75	25 H	....	.....	4.8	0.88	Milky, creamy	...	...	...
July 11	90	60	75	25 H	....	0.137	....	....	Milky	...	...	...
July 13	90	60	75	25 H	....	0.116	2.0	0.78	Milky	...	...	...
July 14	90	60	75	25 H	....	.....	....	....	Milky	...	...	...
July 18	90	60	75	25 H	....	0.063	....	....	Thin and milky	...	...	...
July 22	90	60	75	20 H	....	.....	1.7	0.25	.....	...	...	...
July 31	90	60	75	20 H	....	0.189	....	....	Slightly opaque	...	...	...
August 31	90	60	75	20 H	....	.....	0.72	0.53	Clear	...	...	...

The patient was placed in a sanatorium where, with proper diet and large insulin dosage, she rapidly improved. Within four days she was able to read a little and her strength began to return. The presence of a severe state of acidosis, which was evident clinically, was confirmed by the low carbon dioxid value of 27 per cent. by volume and the two plus diacetic reaction. The rapid control of urinary sugar and of blood sugar by diet and insulin treatment is also shown. The control of acidosis is shown by the rapid return to normal of the carbon dioxid value and the gradual disappearance of the diacetic acid reaction as well as the excessive urinary ammonia. In order to control the lipemia, no fat was included in the diet during the first four days of treatment, and subsequently only small quantities of fat were added to the diet, while relatively large amounts of carbohydrate were prescribed, together with a sufficient dosage of insulin to bring the blood sugar to a normal value. However, at the end of four weeks'

1. Bloor, W. R.: J. Biol. Chem. **25**: 577 (July) 1916; **49**: 201 (Nov.) 1921.
2. Frugoni, C.: Berl. klin. Wchnschr. **45**: 1844, 1908.
3. Neisser, E., and Derlin, L.: Ztschr. f. klin. Med. **51**: 428, 1904.
4. Allen, F. M.: Am. J. M. Sc. **153**: 313 (March) 1917.
5. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in Treatment of Diabetes Mellitus, Arch. Int. Med. **26**: 647 (Dec.) 1920.
6. Gray, Horace; and Root, H. F.: Lipemia Retinalis, J. A. M. A. **80**: 995 (April 7) 1923.
7. McCann, W. S.: Lipaemia Retinalis, Bull. Johns Hopkins Hosp. **34**: 302 (Sept.) 1923.

treatment the plasma was still milky, while at the end of two months, though the plasma was clear, the fatty acid and cholesterol values were still above normal. Thus, even with a low fat diet and continuous sugar freedom, which was maintained by the use of insulin, the reduction of the lipemia was a slow process.

Unfortunately, the first analyses do not date from the onset of treatment, but a week later. No estimations of lecithin were made. If we assume that the magnitude of the latter values were slightly less than those for cholesterol (Bloor's analyses indicate this), the total lipoid content of the patient's serum, July 3, was probably 16 gm. per hundred cubic centimeters of blood. This value was probably greater before treatment began, and it indicates that this was an unusual case of lipemia.

CONCLUSIONS

1. This is the thirty-first instance of lipemia retinalis recorded.

2. The high value of more than 15 per cent. total lipoids seven days after treatment with insulin and a low fat diet was obtained.

3. This severe lipemia was not especially rapid in clearing up, even with the use of insulin and a low fat diet.

242 Moss Avenue.

A NEW COLORIMETRIC METHOD FOR THE DETERMINATION OF UREA WITH UREASE

A COMPARATIVE STUDY *

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The new colorimetric method for the determination of urea in blood serum and other similar materials was reported in Japanese in 1920 by Nakasima and Maruoka,[1] from the Takeya Medical Clinic of the Kyushu University, and will be reported in German [2] in a short time. It is worked out on the principle of Schiff's [3] reaction, by which the urea gives a purple-red in the presence of hydrochloric acid and furfurol.

Nakasima has devised a method that consists in the application of stannous chlorid to make the reaction so delicate and gradual that a small variation in the urea content of the test material can be recognized through the nuance of the reaction.

Of course, this reaction is specific to urea nitrogen. Nothing else in the residual nitrogen of the blood gives the same reaction except allantoin, which gives a similar one; but the reaction is slower and its color is darker.

Moreover, the allantoin content of the blood is generally so small that it may almost in every case be neglected. Therefore, this reaction is first and foremost an ideal method for the determination of urea, because it is, so to speak, the direct method, while all other methods heretofore used have been indirect.

One more advantage of the method lies in the fact that it can be carried out with a small quantity of the test material, and the technic is very simple. However, the original method is in its main purpose designed for the convenience of practical use. Therefore I started to perfect the method also for the purpose of clinical investigation, and have proved its delicacy and accuracy to be almost equal to those of the urease method.

* From the Miura Medical Clinic, Imperial University of Tokyo.

1. Nakasima, Y., and Maruoka, K.: Jikken-Ihoo **83**: 950, 1920.
2. Nakasima, Y., and Maruoka, K.: Deutsch. Arch. f. klin. Med. (to be published).
3. Schiff, H.: Ber. d. chem. Gesellsch. **10**: 773, 1877.

ORIGINAL METHOD

Reagents.—1. Standard Solutions: The purified urea is dissolved in redistilled water saturated with chloroform in the proportions given in Table 1.

These solutions are preserved in a dark, cool place and kept constant for about six months by the addition of chloroform, before evaporation takes place.

2. Furfurol: Pure furfurol is redistilled in an atmosphere of hydrogen gas, and each 1 c.c. of it is filled in a small ampule with hydrogen gas.

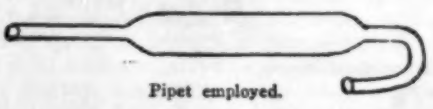
TABLE 1.—*Proportions of Chloroform*

Number of Solution	Contents
10	10/5 mg. urea nitrogen in 100 c.c.
15	15/5 mg. urea nitrogen in 100 c.c.
20	20/5 mg. urea nitrogen in 100 c.c.
25	25/5 mg. urea nitrogen in 100 c.c.
30	30/5 mg. urea nitrogen in 100 c.c.
50	50/5 mg. urea nitrogen in 100 c.c.
100	100/5 mg. urea nitrogen in 100 c.c.

3. Solution of Stannous Chlorid: This is made by saturating 30 per cent. hydrochloric acid with metallic tin. For use in each test, a fresh mixture is prepared of concentrated hydrochloric acid, from 1.5 to 2 c.c.; stannous chlorid solution, 1 c.c.; distilled water, 1 c.c. mixed in one bottle; 4 c.c. of the mixture is quite enough for each test.

Procedure.—The blood may be taken from the ear lobe with a capillary glass, shaped as in the diagram and about 5 cm. in length. The diameter of the main tube is about 0.8 cm. The required amount of blood serum and other materials for each test is only 0.15 c.c. or at least 0.1 c.c., which is measured with a micropipet specially made for the purpose. The exactly measured material is diluted with three times the quantity of distilled water, and after the addition of 1.5 per cent. uranium acetate is forcibly shaken and then centrifugated or filtered to make it free from protein. Thus, the material is diluted five times, which is the reason for dividing by five in the standard solutions. Out of this centrifugate or filtrate 0.1 c.c. is measured with a micropipet specially designed for it into the first one of the ten test tubes, 5 cm. long and 1 cm. thick, standing on a special stand with a screen of milk colored glass as a background.

Now, into the following tubes 0.1 c.c. of each of Standard Solutions 10, 20, 30, 50 and 100 is measured with the same pipet after washing once or twice with the standard solution concerned every time. To each



Pipet employed.

of them, 0.075 c.c. of furfurol is added with a micropipet calibrated for it. Then 0.4 c.c. of the stannous chlorid mixture is added and immediately shaken each time, till the opalescence of the tube content disappears; and so on in all the tubes. This operation must be completed as quickly as possible, so as not to make the beginning of the reaction differ.

At first the reaction gives a blue color; in five or ten minutes, purple, and in fifteen or twenty minutes purple-red, and this red tint is the main color to be compared. After half an hour the color becomes darkish and opaque on account of the precipitation. By looking from time to time through the penetrating light,

one is to estimate the number of the standard to which the color of the test reaction corresponds.

If the test stands, for instance, between 20 and 30, it is compared once more with 20, 25 and 30; and now, if it stands between 20 and 25, being nearer to 25, it is to be estimated as 23 or 24, according to its degree. The

TABLE 2.—*Comparison Between the Colorimetric and the Urease Method of Van Slyke and Cullen (Urea Content in Blood Serum)*

No.	Sex*	Age Yrs.	Diagnosis	Urea Nitrogen: Urease Method, Mg. in 100 C.c.	Urea Nitrogen: Colorimetric Method, Mg. in 100 C.c.	Difference, Mg. in 100 C.c.
1	♂	55	Sclerotic kidney	19.6	20	0.84
2	♂	41	Paralytic dementia	12.6	13	0.84
3	♂	31	Orthostatic albuminuria	11.2	12	1.71
4	♂	46	Brain syphilis	9.9	10	0.21
5	♀	42	Tubular nephritis	11.9	12	0.21
6	♂	48	Aerocyanosis	10.6	10	0.84
7	♂	42	Diabetes	26.6	30	7.14
8	♀	64	Uremia	105.0	110	10.50
9	♀	64	Uremia	86.0	90	8.40
10	♀	30	Pregnancy of tenth month	10.5	9	3.10

* In this column ♂ indicates male; ♀, female.

number thus found expresses the mg. urea nitrogen in 100 c.c. of the test. If the test stands over 50, it is to be diluted by two or three times the quantity of distilled water and used in the second determination with the supposed numbers of the standards. In the same determination the furfurol of the same ampule is to be used,

TABLE 3.—*Repeated Determination of the Same Material by Bahlmann's Method (Mg. Urea in 100 C.c. Blood Serum)*

No. 1	No. 2	No. 3	No. 4	No. 5
42.75	33.75	18.75	50.63	26.25
42.75	31.88	16.88	53.78	24.38
.....	31.88	18.75	.....	25.31

TABLE 4.—*Recovery of the Added Urea by Both Methods (Mg. Urea Added in 100 C.c. of the Material)*

Added	10.0	15.0	30.0	45.0	50.0
Recovered					
Bahlmann	10.50	16.88	31.75	44.25	48.75
Error	0.50	1.88	—1.55	0.75	1.25
Nakasima	10.73	17.17	30.04	45.06	49.36
Error	0.73	2.17	0.04	0.06	0.64

TABLE 5.—*Comparison Between Bahlmann's and Nakasima's Methods*

No.	Kind of Materials	Bahlmann's Urease Method, Mg. in 100 C.c.	Nakasima's Colorimetric Method, Mg. in 100 C.c.	Difference, Mg. in 100 C.c.
1	Blood serum	42.75	42.90	0.15
2	Blood serum	18.75	19.31	0.56
3	Blood serum	58.13	57.94	0.19
4	Blood serum	22.50	21.45	1.05
5	Blood serum	26.25	27.90	1.65
6	Abdominal exudate	22.50	21.50	1.00
7	Abdominal exudate	31.88	34.33	2.45
8	Pleural exudate	18.75	19.30	0.55
9	Abdominal transudate	51.00	51.50	0.50
10	Abdominal transudate	95.25	96.50	1.31

because, unless this is done, comparison becomes impossible.

Nakasima has compared the results obtained by this method with those of the urease method of Van Slyke and Cullen [4] (Table 2).

4. Van Slyke, D. D., and Cullen, G. E.: J. Biol. Chem. **19**: 219, 1914.

As will be seen, there is a possible error of from 1 to 3, which amounts to from 2 to 6 mg. of urea per hundred cubic centimeters. This is a relatively large error, especially in the urea content of blood between 15 and 30 mg. per hundred cubic centimeters, as for normal persons.

So I have supplied the standard solutions as follows: No. 1, 2, 3, 4, 5, . . . 18, 19, 20, 25, 30, 35, 40, 45, 50 and 100, and have assured that the difference of the reaction color between each of them can be well recognized. The procedure is quite the same; only in the second determination the supposed number and those on both sides of it are compared.

The results of my modified method I have compared with those of the urease method of Bahlmann,[5] which I have also modified a little in its apparatus and procedure, in that I used the urease enzyme of the Japanese horsebean, prepared after the method by Ludwig Pincussen [6] in the dose I have chosen.

By application of a superfluous amount of the enzyme, the value of the results obtained with urea

TABLE 6.—*Urea Contents Measured with the Colorimetric Method (Mg. Urea in 100 C.c. of Test Fluids)*

No.	Sex	Age, Yrs.	Diagnosis	Material	Urea N.	Urea Calculated	Comment
1	♂	55	Sclerotic kidney	Serum	19	40.77	
2	♀	61	Chronic nephritis	Serum	26	55.79	By uremia
3	♂	63	Sclerotic kidney	Serum	45	96.57	By uremia
4	♀	26	Chronic nephritis	Serum	20	42.90	
5	♂	65	Sclerotic kidney	Serum	27	57.94	
6	♂	21	Hepatic cirrhosis	Serum	4	8.58	With severe jaundice
7	♂	21	Hepatic cirrhosis	Ascites	5	10.73	With severe jaundice
8	♂	50	Carcinoma of the bile duct	Serum	5	10.73	With severe jaundice
9	♂	53	Hepatic cirrhosis	Serum	13	27.89	Without jaundice
10	♂	53	Hepatic cirrhosis	Ascites	14	30.04	Without jaundice
11	♂	67	Hepatoma and chronic nephritis	Serum	4	8.58	With medium jaundice
12	♂	26	Catarrhalic jaundice	Serum	11	23.60	Reconvalescent
13	♂	54	Hepatic cirrhosis	Serum	4	8.58	With severe jaundice
14	♂	54	Hepatic cirrhosis	Ascites	5	10.73	With severe jaundice
15	♂	50	Hepatic cirrhosis	Serum	7	15.02	With slight jaundice
16	♂	16	Tuberculous meningitis	Spinal fluid	25	53.65	In high fever

becomes higher than its true value. This has also been noticed recently by Behre.[7]

For adding the sodium carbonate to separate the ammonia I have furnished a small reservoir on the stopper, wherewith the sodium carbonate can be poured into the main tube without any risk of letting the ammonia escape; for the evaporation of ammonia fifteen minutes is long enough, as I have examined it by drawing a certain amount of ammonia salts.

The Bahlmann method thus modified gives almost the same value by repeated determination of one material, as in Table 3.

I have also examined how much of the urea amount added to the foredetermined materials can be recovered with both methods (Table 4).

I have also measured a number of materials by both methods to see the difference between them (Table 5).

As the results show, the possible error with this method is at the largest 2.45 mg. per hundred cubic

5. Bahlmann, R.: Ber. ü. d. ges. Physiol. **1**: 54, 1920.
6. Pincussen, Ludwig: Micromethodik, Leipzig, 1921, p. 25.
7. Behre, Jeanette A.: J. Biol. Chem. **56**: 395 (June) 1923.

centimeters, which is also unavoidable with the urease method.

In Table 6 are given some data obtained by measurement by this method in the case of several diseases.

Here it is worthy of notice that the urea content of blood is very high in renal affections, especially in the case of uremia, and remarkably low in liver affections with severe jaundice.[8]

SPASMODIC DIPLOPIA

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Double vision, either transitory or constant, is a fairly common symptom in the practice of ophthalmology and neurology. During the last five years, the literature of epidemic encephalitis has so emphasized diplopia as being a symptom of diagnostic importance that perhaps one is apt to regard it, in certain types of obscure cases, as evidence of encephalitis.

Constant diplopia is not so difficult to account for in a given patient. It is my purpose in this paper to present a small series of cases in which transitory diplopia occurred and had a significance which, I believe, is worthy of discussion.

In eliciting a history of this symptom, it is important to differentiate distinct double vision from mere blurring or indistinctness of objects. It is not uncommon to have a patient say that he sees double at times, yet on questioning it is manifest that the patient refers merely to indistinctness of objects. Of course, errors of refraction and muscular insufficiency may produce such phenomena, which one might regard as milder degrees of real diplopia. However, the characteristic of genuine transitory diplopia is that objects will suddenly appear with two images, one of them distinct and the other blurred. In the diplopia discussed in this paper the symptom occurred quite independently of use of the eyes, was sudden in onset, and would continue for a few seconds, or at times a minute or two.

REPORT OF CASES [1]

CASE 1.—J. K., a man, aged 37, whose family and past history were irrelevant except that in February and March, 1923, he was ill for a month with influenza and pleurisy; there being nothing at this time to suggest encephalitis, he had been perfectly well until the present illness appeared.

About the middle of August, 1923, in a period of a few days, there were (1) belching, bloating and then constipation; (2) sleeplessness; (3) restlessness and a tendency to change positions often. It was this restlessness which the patient thought was responsible for his sleeplessness. From the onset until the middle of September, these symptoms continued and were accompanied also by irritability and quite frequent transitory double vision when looking at distant objects. On examination, the only abnormalities were myotactic irritability, grossly exaggerated deep and superficial reflexes, hyperhidrosis and a slowing of the pulse rate from 88 to 66 beats a minute by ocular pressure. The serum, blood and urine were normal. Examination of the eyes showed normal pupils and fundi, no nystagmus, no refractive error and no evidence of muscle weakness.

In further investigation of the history, it was discovered that the patient had for about a year been drinking 2 or 3 quarts of strong coffee a day, that he might carry on with his long hours of work.

The sole treatment was to discontinue the use of coffee, and the patient was fully recovered by the first of October.

CASE 2.—Mrs. T., aged 36, whose past history was negative except that she had always been "nervous," had what she thought was ptomain poisoning about June 25, 1923, after eating a frankfurter. No one else in the family was upset, however. There was a slight fever and then, after about two days, diarrhea without abdominal pain. Sleeplessness appeared with the diarrhea, and both symptoms persisted to the time of her first visit, July 6. From July 2 there was considerable headache. For nearly a year there had been numbness in the finger tips, worse after sewing and troublesome when she went to bed. For several weeks she had seen double at times. This double vision was in no way related to the use of her eyes. It came suddenly, lasted a minute or two, and was evident when looking at distant objects. She had no nose or throat trouble. Her oculist stated that no glasses were needed.

The patient was stout. The systolic blood pressure was 130; diastolic, 70. There was no evidence of thoracic or abdominal disease. The nervous system showed no abnormality other than exaggerated tendon reflexes and a slowing of the pulse from 84 to 60 beats a minute by ocular pressure. The urine, temperature and fundi were normal.

Treatment consisted of thyroid extract, ¼ grain (0.016 gm.), and phenobarbital (luminal) ¾ grain (0.05 gm.), twice a day; also 4 ounces (120 c.c.) of sherry wine in warm water on retiring and sleeping on a high pillow were prescribed.

On July 13, the patient stated that her sleep had been normal from the first night of treatment. The diarrhea stopped after July 7, and the nervousness and numbness in the fingers had ceased. The pulse was 78; diplopia had occurred twice since July 6, and lasted only a minute or so.

A letter from the patient, October 26, stated that there was no diplopia during the summer, but that the symptom had occurred twice between October 15 and October 26. The paresthesias in the finger tips occurred occasionally. The patient did not report, and the cause of the recurrence of diplopia can only be guessed at.

CASE 3.—Mrs. P., aged 45, seen June 29, 1923, whose past history was irrelevant and in whom menstruation was unchanged, for a year had complained of dizziness and a feeling of weight at the back of the head, especially when lying on the left side. During this year there had developed constipation, belching and a frequency of urination, which was influenced by what she called "nervous tension." For six months she had noticed brief attacks of double vision, occurring perhaps twice a week. This symptom appeared suddenly, and was not related to the use of the eyes.

Physical examination showed normal blood pressure, a coated tongue and no evidence of disease of the thoracic or abdominal viscera. Special examination of the ear, nose and throat, including transillumination of the sinuses, was negative. Ophthalmologic examination showed a slight astigmatism with normal acuity and muscular balance. The patient's glasses were stated to be proper for her refractive error. Examination of the nervous system showed nothing abnormal, and ocular pressure caused no change in the pulse rate.

The patient was given a prescription containing aloin 1/10 grain (0.0065 gm.); atropin sulphate 1/150 grain, and phenobarbital sodium, ¼ grain (0.016 gm.), to be taken three times a day.

July 13, she stated that her dizziness and the gastrointestinal symptoms were better. The diplopia attacks were shorter in duration.

July 27, the patient stated that her symptoms had all disappeared.

September 7, the patient reported again and asserted that there had been no recurrence of the symptoms. The menses were still normal.

CASE 4.—J. M., a man, aged 34, seen in August, 1922, had been sickly and had frequent attacks of croup, when a child. For the last seven years he had complained of deafness and tinnitus in the right ear. There was also a myopia, with

8. All the reagents and instruments may be obtained from Kekko Seiyako & Co., Osaka, Japan.

1. Case 1 was observed in the neurologic service of Bellevue Hospital, and Cases 3, 4 and 7 in the Cornell Clinic.

glasses giving correction to normal vision. For about six months he had been having sudden "spells," coming at irregular intervals. Each spell was ushered in with a sudden, intense vertigo and a terrific noise in the right ear. Pallor, vomiting and a cold perspiration came next. The acute symptoms diminished in a few moments, but each spell was followed by a brief attack of diarrhea. Since these spells appeared, he had had constipation. In none of the attacks was there any double vision, but on several occasions he had noticed, while at his work as a butcher, that some objects would suddenly seem distinctly double. He did not know of any exciting cause for these spells, but had observed that for a day or more before each attack his appetite was poor and that for a few hours previous he was slightly dizzy.

The patient was of a status lymphaticus type. There was no disease of the thoracic or abdominal viscera. There was marked dermographia and a respiratory arrhythmia of the pulse, which, however, was not affected by ocular pressure. Otologic examination showed a partial degeneration of the right auditory nerve. The patient was given atropin sulphate, 1/150 grain, and phenobarbital, 1/4 grain (0.05gm.), to be taken twice a day.

He reported in October, 1922, that his attacks and constipation had ceased. Medication was discontinued.

In August, 1923, he stated that none of his symptoms had reappeared. The tinnitus and deafness in the right ear, however, remained unchanged.

In January, 1924, the patient stated that for about two weeks he had been having slight, brief attacks of dizziness, which were accompanied by an increase of the tinnitus in the right ear and moderate sweating. For three months he had been employed delivering milk, his hours of work being from 3 to 10 a. m. He had again become careless about his bowel movements and finally, about two weeks before the reappearance of the dizzy spells, constipation developed. The same treatment given in 1922 afforded relief again.

Case 5.—Dr. E. L., a man, aged 32, whose past history was negative, for about a year had been under extra strain in his work as a surgical intern. In April, 1923, a slight left frontal sinusitis suddenly appeared. It was neither preceded nor followed by any symptoms to suggest infection of the nasopharynx, and cleared up in a few days. About a week later, epigastric pain, belching and constipation developed. Next, frequent sudden attacks of dizziness, fatigability and an esophagospasm developed. One day in June, while operating, the patient suddenly became very dizzy, so that he had to steady himself. He was able to continue with the operation, which was for a radical removal of the breast, until, owing to sudden diplopia, he clamped a nerve in the brachial plexus instead of an adjacent artery. During the next few weeks all symptoms increased.

In July, 1923, atropin sulphate, 1/100 grain (0.00065 gm.), twice a day, stopped all the symptoms.

During August and September, while he was taking a vacation, the gastro-intestinal symptoms recurred. There was bloating after meals, and there were occasional attacks of pain and tenderness over the region of the appendix. Diets were only partly effective, and atropin did not seem to help. On one occasion there was an attack of sudden dizziness, with a slowing of the pulse to 50 beats a minute. This state lasted about an hour.

Gastro-intestinal roentgen-ray examination showed no organic lesion.

Case 6.—G. B., a man, aged 38, whose past history was negative except for overwork for the last four or five years, began to have constant tinnitus in the right ear in July, 1921. About 5 o'clock one morning in August, he awoke in a profuse sweat. He felt nauseated, and there was an intense desire to defecate. He hurried to the bathroom and was suddenly seized with vertigo so violent that he fell to the floor. He vomited and lost control of both sphincters. After about ten minutes he was able to get back to bed and stayed there for the rest of the day, feeling prostrated.

From this time on there was marked constitpation, with hard, dark-colored, scanty movements. There was a gradual loss of weight.

Between June and September, 1922, the patient had perhaps twenty sudden attacks of dizziness, lasting five or ten minutes. They usually occurred toward the end of the day. The onset was sudden and followed by belching, sweating and weakness for about an hour, and occasionally a desire to defecate. Some attacks were ushered in with gastric distress and belching, with dizziness following in a few seconds. On one occasion, while the patient was walking in the street, there was distinct double vision in the horizontal plane for both near and distant objects. This lasted about half a minute, and was not accompanied by any other symptom.

The patient and his wife had both noticed that a dizzy attack was usually preceded by an increase in constipation and a heaviness of breath in the morning.

Early in October, two severe attacks occurred, three days apart. In the second attack the patient was thrown to the sidewalk and struck his head forcibly. He was dazed for a moment, but was able, with help, to walk to his home, a block away. Examination made an hour after this attack showed nystagmus to the right, an increase of deep reflexes on the right side, a questionable right plantar response, and a positive Romberg sign. In addition, the patient was hypotrichotic, had a faulty posture, with a ptosed abdomen, and there was a blowing systolic heart murmur. The Wassermann reaction was negative; the blood pressure, blood count and urine were normal.

The patient was ordered to take a vacation. Diet and exercise were prescribed. In addition, he was given aloin, 1/10 grain (0.0065 gm.) to be taken three times a day. He was away for a month, during which time he had four slight attacks of dizziness. In one, objects moved rapidly to the right, in another the only symptoms were dizziness and double vision for a few seconds. Double vision occurred once independently of any other phenomena.

By December, the patient had gained 5 pounds (2.3 kg.), the bowels were regular, and except for three mild attacks of belching and sweating, he had no complaints.

Otologic examination in October showed an irritability of the vestibular apparatus and a slight nerve deafness on the right side. The nystagmus and pyramidal tract phenomena that were observed on the first examination continued for several days. The nystagmus disappeared last, and toward the end could be elicited only when the patient was standing. The heart murmur had disappeared.

The patient was well until the summer of 1923, when on two occasions constipation developed, and there were three or four slight attacks of dizziness. Lactose and *Bacillus acidophilus* culture were effective in relieving the constipation.

Early in October, 1923, the constipation appeared again, and for several days the patient did nothing about it. One afternoon he went to a football game without having taken any lunch. At 5 o'clock he ate a frankfurter. At 6:15, when nearly home, he suddenly became very dizzy and staggered as though intoxicated. When he got into the house he had to lie down. He belched continuously, his abdomen felt bloated, and he perspired profusely. Examination showed occasional extrasystoles and a marked respiratory irregularity of the pulse. Ocular pressure reduced the pulse from 90 to 66 beats a minute. The skin was cold and moist, and there was a distinct dermographia. Palpation of the abdomen revealed a mass in the upper right quadrant. It was not tender, it moved with deep inspiration, and it seemed to run up under the border of the liver.

Gastro-intestinal fluoroscopic examination showed hypertonicity of the viscera and a kink at the hepatic flexure, causing a partial obstruction and slowing the passage of intestinal contents.

Exercise to correct the faulty posture, a roughage diet, and abdominal massage were prescribed.

At the present time (January, 1924), the patient is getting along well. He has been instructed how to watch for and detect a reappearance of the mass in the upper right quadrant, which is due to an accumulation of the contents of the colon at the hepatic flexure.

Case 7.—Miss R. B., aged 42, seen in February, 1923, whose past history was negative, during the preceding half year had suffered from constipation and had lost about 10 pounds

(4.5 kg.). She recently began to have pain in the left shoulder, which increased and radiated to the back of the neck. It made it difficult for her to raise her arm.

Physical and neurologic examination showed nothing in particular except tenderness over the cervical region of the spine, left posterior triangle of the neck, in the left shoulder joint, and in the left deltoid and triceps muscles. There was slight wasting of the deltoid. Blood count, blood analysis and urinalysis were negative. A roentgenogram of the cervical and upper dorsal spine showed slight ostearthritic changes. Gastro-intestinal roentgen-ray examination showed evidence of diverticulitis in the descending colon and sigmoid.

Aloin and atropin relieved the gastro-intestinal symptoms and reduced the pain in the shoulder for two or three months. Thyroid extract, ¼ grain (0.016 gm.), twice a day was then prescribed because dryness of the skin, falling of the hair from the eyebrows and brittleness of the finger nails appeared. Further improvement of the shoulder pain followed. Finally, the patient was advised to have vaccine treatment, and after a three months' course of a stock vaccine of *Streptococcus viridans* and *Streptococcus fecalis*, the shoulder pain was entirely relieved. However, the gastro-intestinal symptoms recurred from time to time, although colon irrigation and *Bacillus acidophilus* culture were helpful in reducing the frequency and severity of exacerbations of the digestive disturbances. In November, 1923, the patient observed that two or three times she had noticed that objects appeared double for a moment or two.

The first time the double vision occurred was within a half hour after taking a bismuth meal. The double vision itself was described as being a blurring of near objects, but objects 5 feet or more away seemed double in the horizontal plane.

In this case the significance of the double vision is open to question, because the patient is a manuscript reader and for several years has had to wear glasses. Her eyes were examined and the glasses which she had been wearing were found to be proper for her refractive error. The patient volunteered, however, that she did not think her work had anything to do with the double vision, because at no time did it occur when she was at work. Furthermore, she thought that something about her digestion was responsible, because on the days when she had the double vision she had been troubled with belching.

REVIEW OF CLINICAL MATERIAL

Three of the patients were women; four were men. It is interesting to note what conditions might be regarded as predisposing. Of the women, two were approaching the menopause, although in neither had there been any changes in menstruation; the third had always been "nervous." Of the four men, three were definitely hypotrichotic, and one of them gave a history of frequent attacks of croup as a child; in the fourth man, Patient 1, there was no constitutional state that might be regarded as predisposing.

Digestive disturbances of one sort or another were present in every instance. In Cases 1, 2 and 6, the presenting symptoms seemed to be related to some article of food ingested. In Cases 3, 4 and 7, there was nothing definite to suggest any particular article of food as a cause for the various occasions in which symptoms appeared. In Case 5, fatigue or "nervous exhaustion" seemed to be a precipitating factor. In Cases 4 and 6 there was chronic ear disease.

In surveying the group of cases, certain symptoms and signs pointed to the fact that the autonomic part of the vegetative nervous system was overactive. Spastic constipation, gastric unrest and eructations, respiratory arrhythmia strongly positive oculocardiac reflex responses, hyperhidrosis, vasovagal attacks, esophagospasm and frequency of urination may be mentioned. The predisposing factors in the women were of a sort that are often associated with an instability or hyperexcitability of the vegetative nervous system. Endocrine imbalance and metabolic disturbances, which are common in such instances, might be regarded as part and parcel of an upset vegetative mechanism. In the men, the hypotrichosis is a sort of "outward and visible sign" frequently associated with inadequately balanced vegetative and endocrine systems. The symptoms observed, which were referable to an overactive autonomic, would, if combined in one person, form a composite clinical picture that would be called vagotonia. Of course, one may find in any sick person one or more symptoms that suggest autonomic overactivity, and an enthusiastic imagination might lead one to wrongly call such a case vagotonic. However, in the patients described here, not only was there an absence of prominent symptoms of other nature, but in each patient there was at one time or another a sufficient variety of vagotonic phenomena to warrant the view that these patients really had vagotonic syndromes.

The treatment of the various cases is difficult of analysis because of the diversity of measures used. In one instance the cause of the symptoms seemed to be excessive consumption of coffee, and discontinuing the beverage was sufficient to bring about a cure. Theoretically, atropin alone should have been used in every case, if one were to conduct pharmacologic experiments. But, unfortunately, discretion demands that a patient be relieved as quickly as possible, and in most of the cases here reported, more than one measure was indicated.

Caffein is known to be a vagus stimulant, and in the "caffein poisoned" man, withdrawal of coffee was mathematically the same as using atropin to diminish vagus tone. In Case 5, atropin alone did have a temporary effect. In Case 4, atropin and phenobarbital were used; I think it unlikely that phenobarbital was solely responsible for the relief of symptoms, and that therefore atropin should be given some credit.

COMMENT

There are many causes for transitory diplopia. It may occur in multiple sclerosis, during the attacks of Ménière's disease, and in lesions affecting the function of the ocular muscles—basal meningitis, intrapontile and extrapontile tumors, vascular lesions of the pons and midbrain, epidemic encephalitis, and pressure on one or more of the nerves supplying the eye muscles. Infection of the teeth and cranial sinuses may produce paralysis of the ocular muscles, and some authors state that reflex spasm of the ocular muscles to produce transient binocular diplopia may be due to similar infections. In the latter event, the transitory diplopia is usually more distinct than the double vision in partial paralytic involvement of the ocular muscles. The diplopia in the series of cases here presented cannot be explained by any of the foregoing causes. Eppinger and Hess state that vagotonic persons frequently have anomalies of muscular control of the eyes. They do not describe or illustrate what they mean, but the statement suggests that in some way the cerebral portion of the autonomic may at times, when the entire autonomic is in a state of overactivity, influence momentarily the tonus of the muscles supplied by the oculomotor nerves. Perhaps this sort of phenomenon might be regarded as analogous to the extrasystoles occurring in "vagotonic" persons. In the so-called reflex accommodation spasm, when sinus or dental infection is an associated condition, the mechanism is evidently in the nature of a local reflex.

Although in this series of cases it might be maintained that the diplopia is a vagotonic phenomenon, since it is accompanied by other clinical features characteristic of vagotonia, there are certain questions of physiology that need answering before such an hypothesis can be accepted. In particular, attention must be paid to the two cases in which there was ear disease, with symptoms quite similar to those described in Ménière's syndrome.

In organic ear disease, tinnitus and vertigo are not difficult to understand. But there are instances of Ménière's syndrome in which not only temporary vasomotor disturbance in the labyrinth but often "angioneurotic" increase in the perilymph have been regarded as causal. It has been stated [2] that "in certain debilitated states of the nervous system, symptoms closely resembling, if not identical with, Ménière's disease may occur." Seasickness illustrates the relation between the vestibular mechanism and that portion of the vegetative nervous system stimulating gastro-intestinal musculature. Gowers,[3] discusses the frequent difficulty in distinguishing vasovagal attacks from Ménière's syndrome. Biehl [4] cites several cases of tinnitus in which the symptom was relieved by drugs depressing the peripheral portion of the autonomic, and concludes that tinnitus may at times be regarded as evidence of vagotonia and is of vasomotor origin. The value of epinephrin in treating ear disease is reported by several otologists. Duke [5] reports two cases of Ménière's syndrome seemingly caused by allergy and cured by the administration of epinephrin. (Did not the epinephrin act really to reduce the vagotonic state by increasing sympathetic tone?) It seems reasonable, therefore, to maintain that conditions affecting the vagus mechanism may cause labyrinthine or vestibular symptoms.

In the two cases of ear disease in my series, it would indeed be rash to assume that the deafness originated in a changed vasomotor state due to autonomic influence; but it is not unreasonable to consider that the presenting symptoms were to some degree conditioned by the state of the auditory apparatus.

Diplopia is known to occur in Ménière's disease in association with the attacks of vertigo, and in these instances may be accounted for by a spread of impulses from the auditory pathways to their connections with the posterior longitudinal bundle, which controls ocular muscle coordination. However, the diplopia in my cases will not admit this explanation. In the first place, only two of my patients had symptoms suggesting Ménière's syndrome, and only once, in them, was diplopia accompanied by vertigo. On all other occasions, with these patients, the diplopia occurred alone. In Case 5, diplopia occurred once and was then associated with vertigo; but that patient had nothing to suggest ear disease. In the other patients, the diplopia was never associated with any symptom suggesting vestibular or labyrinthine disturbances.

The diplopia in my series of cases seems to call for another explanation. On the one hand, the relationship between the vagus and the auditory nerve functions, and, on the other hand, the occasional occurrence of diplopia in Ménière's syndrome are somewhat suggestive of the hypothesis that an undue state of vagus irritation might itself at times provoke diplopia.

Timme [6] states that in certain types of pituitary disturbance there may occur a temporary swelling of the pituitary body so that there is pressure on the walls of the cavernous sinus, and that during the headaches there may be present ophthalmoplegic phenomena which will include diplopia, strabismus, ptosis or pupillary abnormalities. The clinical evidence in my series of cases obviously excludes this explanation for the diplopia.

Finally, "muscular insufficiency" or refractive errors cannot account for the diplopia. Ordinarily, accommodation spasm associated with refractive errors produces diplopia on distant vision; but such diplopia is not so fleeting as that described in this paper. Of the seven patients, three had normal vision; two wore glasses that properly corrected their refractive errors; one with astigmatism had her glasses refitted without relief, and one was myopic, the refractive error being corrected with glasses. Of course, eye strain has been held responsible for some cases of gastro-intestinal disturbance; but such an explanation for the vagotonic phenomena described in this series of cases would, in my opinion, indicate a lack of clinical perspective. If gastro-intestinal symptoms can be reflexly due to eye strain, one might on the analogy of "what is food for the goose is sauce for the gander" think that gastro-intestinal disturbances might reflexly produce some disturbances of ocular function. Perhaps the statement of Eppinger and Hess, that vagotonia may present anomalies of muscular control of the eyes, supports such an hypothesis. Accommodation spasm has been mentioned as one of the manifestations of vagotonia, but in my experience this accommodation spasm is more persistent, and I have not seen it producing the sort of diplopia described in this paper.

It is my belief that the diplopia itself in this series of cases should be considered as a manifestation of an irritated autonomic mechanism, and that it is analogous to the occurrence of extrasystoles in "vagotonic" persons. I have no statistics indicating how often the symptom occurs in "vagotonic" states, but it is my impression that it is present in perhaps 10 per cent. of such cases. Perhaps the incidence is greater, but this can be determined only by further investigation of case histories. It is, I think, possible that the symptom might occur in the so-called vegetative neuroses when the clinical picture is not characteristic of vagotonia. It must be kept in mind that recent clinical observations have led us away from the formal concepts of Eppinger and Hess, and that individuals should be considered not as vagotonic or sympatheticotonic, but rather as having hypertonia or an abnormal irritability of the entire vegetative nervous system.

From the clinical point of view, the diplopia described in this series of cases has a diagnostic significance. Because of this symptom, one patient was considered by his physician to be suffering from acute epidemic encephalitis. Patient 3 had been refitted with glasses without any benefit, and Patient 7 was about to consult an ophthalmologist. Another lesson from these cases is the importance of a complete and accurate history.

Perhaps this type of diplopia should have a separate designation. Transitory diplopia is not quite descriptive. Spasmodic diplopia might be a better term. It implies its transitory nature, yet differentiates it from the transitory diplopia due to weakness of the ocular muscles caused by any one of a variety of conditions. Finally, the term indicates what I believe is the nature

2. Osler: Practice of Medicine **7**: 568, 1910.
3. Gowers: Borderline of Epilepsy, 1907.
4. Biehl: Vagotonia in Relation to the Ear, München. med. Wchnschr. **67**: 1263 (Oct. 29) 1920.
5. Duke, W. W.: Ménière's Syndrome Caused by Allergy, J. A. M. A. **81**: 2179 (Dec. 29) 1923.
6. Timme: "Evolution Status Thymico Lymphaticus," New York M. J. **114**: 12 (July 6) 1921.

of the functional disturbance—a temporary overaction of certain muscles supplied by the oculomotor nerves. Bearing on this point were the facts that the diplopia was always described by the patients as being in the horizonal plane and most noticeable on relaxed or distant vision or when there was no effort at close accommodation. It is not easy to establish whether the spasm is one of accommodation involving the ciliary muscle, or of convergence involving the internal rectus muscle, or of both. The usual accommodation spasm described as occurring with vagotonic states might be regarded as analogous to the paroxysmal tachycardia that has been attributed to vagus activity, whereas the diplopia described in this paper is rather analogous to the cardiac extrasystoles. The fleeting diplopia in these cases never occurred at a time when the patient could be tested for muscular insufficiency. It would be helpful to have such patients carry about with them a bit of colored glass so that they could observe the position of the false image when the diplopia was present.

SUMMARY

1. Seven patients had symptoms referable to an overactive vagus function, and all had a transitory diplopia not easily explained by the usual causes and not related to use of the eyes.

2. The diplopia is best explained as a manifestation of the state called vagotonia, is analogous to the cardiac extrasystoles observed in vagotonic states, and is due to a brief spasm of certain muscles supplied by the oculomotor nerves.

3. The term spasmodic diplopia is offered as best descriptive of the type of diplopia observed in the series of cases reported.

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THE ADVANTAGES OF MEDICAL-SURGICAL CLINICS IN UNDERGRADUATE TEACHING

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No thoughtful observer of undergraduate medical teaching fails to be impressed by the multiplicity and diversity of interests that literally assail the student. With few exceptions, these young men and women enter the medical school with hardly more than such scattered bits of technical information as have been picked up during several leisurely spent years of liberal training; in general, our colleges do not conceive their purpose to be the provision of a purely technical training bearing directly on the study of medicine, a decision that is sound as well as all but forced on them if they are to effect in their students a general cultural development. The schools of medicine are therefore required to crowd into four years, which represent roughly 4,000 school hours, an ever increasing number of subjects. Medical thought is steadily advancing into fresh and highly specialized fields of endeavor, and from most of these are coming new facts of importance or clearer interpretations; with all of these developments the bewildered medical student must have some acquaintance, for apparently in no other way can there be met our twofold responsibility of training competent practitioners and discovering the unusually gifted few, recruits for the ranks of investigators and teachers.

The medical curriculum of today may in a sense be regarded as an effort to accomplish an all but impossible task; four school years do not appear to afford sufficient time under our present methods and organization. The student intent on making the most of his opportunities has difficulty even in establishing touch with so many subjects, and is not infrequently so hard pushed in acquiring bare facts that his time for reading and the thought necessary for intelligent comprehension is reduced to a minimum. What curriculum committee is there that is not too familiar with departmental requests for additional teaching hours? And, no doubt, most of these requests are reasonable in the the light of our present scheme of instruction.

TEACHING THE SPECIALTIES

Along with this difficulty there has developed another, not so obvious perhaps but certainly of equal importance, for it is bringing about an undesirable state of affairs, which we will do well to consider carefully. We have drifted into feeling that any highly individualized branch of medicine, the so-called "specialty," is best presented to the student as a concrete unit, and have assigned our time and space accordingly. The facts of the "specialty" are important and formidable in their number, and since half knowledge of these facts appears dangerous, the teacher is unavoidably impressed with the necessity of thoroughness in his presentation; but in the very effort to accomplish a self-imposed task of this character there lies measurable risk of losing a proper sense of proportion, with a consequent tendency to fix the "specialty" in the mind of the student as a more or less isolated subject, interesting, even at times intriguing, but, after all, a special field without too obvious relations to the main subject; that is, the understanding and relief of physical ailments.

Even if the subject is happily in the hands of a teacher who is keenly alive to this risk and strives diligently to avoid it, there still remains the fact, one may perhaps say even the handicap, that expertness in a special field not infrequently demands such constant application of time and strength as to force the sacrifice of other interests, so that by the very nature of his training the "specialist" incurs the risk of disqualifying himself along general lines while achieving mastery of his field. To one so accomplished it can hardly be other than disquieting to realize the difficulties that confront him in his purpose to give the student a sound understanding, not alone of the details of his subject but as well of the place held by it in the general field of medical knowledge. Furthermore, from this standpoint the word "specialty" may be interpreted as including both the many branches that cover only a restricted field, and the more comprehensive subjects as well; even the departments of internal medicine and general surgery come in question, for increasing knowledge and instruments of precision open up new fields, which have a general tendency to split off more or less formally from the parent department, since competence in any one of them demands the entire time of the individual seeking to master the subject. Thus it is that urology, gynecology, orthopedic surgery, laryngology and a number of other subjects, while nominally branches of general surgery, have long since developed into autonomous units whose administration is so onerous a duty that the directing head of any one of them has difficulty in maintaining touch with, let us say, even the department of internal medicine, thus sacrificing an influence essential to a balanced development of virtually every specialty.

COORDINATION OF INFORMATION

The outstanding feature in the development of medical science in recent years is probably the great strides taken in the extension of our knowledge in special fields, and with reference to either research or practice there is small reason for argument concerning the value of an arrangement of affairs that results in such remarkable development; however, from the point of view of the undergraduate medical student it may be that this arrangement does not seem a happy one, for, while it is true that the "specialties" benefit, one questions whether there are not sacrificed the elements of orderliness and balance in the student's training. There occur to one many examples of the situation we have in mind; one will suffice to point the moral, perhaps a typical instance being the presentation to the student of tuberculous disease of the cervical lymphatic glands. This is, after all, but one of the manifold problems of tuberculosis; and yet in its turn the subject has been so amplified that the student surely encounters it in the departments of general surgery, laryngology, orthopedics and general medicine, and probably in others.

One cannot justly question the worth of instruction presented in this way so far as the minutiae of the disease are concerned, but one questions whether the student obtains at the same time a symmetrical conception of the whole matter under consideration. Is it not true that one is more apt to find a little knowledge of the details of physical diagnosis of this condition, or some acquaintance with the technical management of diseased tonsils, or a partial understanding of the general problems in hygiene opened by the study of tuberculosis than that the student shows evidence of an orderly, balanced conception of tuberculosis as a disease, one of whose important clinical manifestations is cervical adenitis? These former accomplishments are praiseworthy, of course, but at the same time it should be recognized that in his approaching rôle of responsible adviser it is going to be of prime importance for the student to have clearly in mind a balanced conception of the whole problem before him. Ability to recognize the physical signs of tuberculous cervical adenitis is without great point if the student is failing in the ability to visualize his patient as an example of the general disease: tuberculosis. There should be developed in the student a rounded knowledge of the general disease under consideration; and, while encouraging an approach to the subject from many different angles, we must recognize our additional obligation of helping the student to coordinate the information so acquired. The disadvantages inherent in our present method of teaching obviously bear an inverse ratio to the maturity of the student; but this matter is, after all, an affair concerning the undergraduate, and circumstances plainly suggest that we can readily assume too great an ability on his part to systematize and coordinate the multitude of facts passing in review before him continuously for four years, a task frankly challenging the ability of those who are many years his senior.

Alcoholic cirrhosis of the liver, with resultant ascites, is a distinct and rather well understood disease, thus presenting the opportunity of giving the student a symmetrical understanding; and yet in physiologic chemistry he encounters the argument between transudate and exudate and detailed chemical analysis of the fluid, in pathology he studies the histologic changes in the liver, in medicine he learns to recognize fluid in the peritoneal cavity and the clinical effects of its massive accumulation, and finally in surgery there is presented to him the vexing question of surgical treatment. Can one justly present the subject in this way and deliberately leave to the student the more difficult problem of coordination of the facts presented? True it is that skill in the recognition of intraperitoneal fluid is highly desirable; it is even more desirable that the student be able to interpret this phenomenon and bring to bear on it sound ideas as to its causes, its effect and its management, a knowledge that most students will attain only if they are guided in a certain degree in this effort. I have been interested for several years in this matter and have experimented with it from time to time. On one occasion, a number of years ago, an attempt was made to present portal obstruction and ascites as a disease unit. Four persons participated in the clinic; namely, a physiologic chemist, a pathologist, an internist and a surgeon. Using a patient with well marked ascites as an object lesson, the better part of two hours was occupied, the audience consisting of the third and fourth year classes. Two hours is a long teaching period, probably much too long; nevertheless the interest of the students was held closely during this time. Among those concerned in the clinic there was unanimous agreement that the method seemed to offer great advantages and should have thorough trial, but for various reasons it was found impracticable at the time to continue.

COMBINED CLINICS

Recently opportunity has again presented itself to make additional efforts of the same sort, and just as before the results of this work seem to prove that the idea behind it all is sound. For one hour a week during this school year Dr. Arthur L. Bloomfield of the department of medicine, and I of the department of surgery, Johns Hopkins Medical School, have held a joint clinic. We started with the idea that it would be of interest to present in this way—namely, as a combined medical and surgical hour—some of the conditions lying between frank medicine and frank surgery. We ignorantly assumed at first that such cases, though of great interest, would be limited in number, but to our surprise we find that there are many diseases that may be presented with distinct advantage after this fashion; the field is really a rather comprehensive one. Some of the subjects for our medical-surgical conference have been abscess of the lung, diabetic gangrene, angina pectoris, acute nephritis with tonsillitis, postoperative pneumonia, toxic adenoma of the thyroid, and mesenteric thrombus; this list, though by no means complete, serves to illustrate the management of this hour. Each of these topics is a legitimate subject for either a medical or a surgical clinic, but it is surely only the quite exceptional teacher, be he internist or surgeon, who would present the subject primarily as one of the broad art of medicine rather than as a problem concerning chiefly that branch of the art represented by the teacher. It is, however, precisely this broad presentation of subjects that we believe of great value to the student, so valuable, in fact, as to warrant strenuous efforts to obtain it. No one doubts the value of highly specialized teaching, but there is room for debate as to whether teaching so organized fulfils the whole duty of a medical school.

These combined clinics have proved a very happy experience for us who are directing the course, and we feel that the plan has been shown to have distinct advantages as a method of teaching; furthermore, there has come a growing conviction that the underlying prin-

ciple offers a much wider application than we have been giving it, and that its more general application would prove of great help to the undergraduate student. Follow for a moment the path of the patient with epigastric pain who undergoes operation for duodenal ulcer; in the admitting dispensary he is seen by one group of students, in the medical ward where he is sent for observation and study by a second group, in the surgical ward by a third, and in the laboratory a final group is shown such tissue as may have been removed at operation. No single student follows this patient from admission to discharge, although it is quite generally held that careful study of a few cases provides the best possible start for one begining his clinical training. It would doubtless be of the utmost help to the student if appropriate diseases were given such a combined presentation in which at least internist, roentgenologist, pathologist and surgeon participated; during such a clinic the problem would be briefly discussed by a representative of each of the departments concerned, so that the student would participate in what might well be regarded as a rather elaborate consultation, during which deliberate effort is made to throw light not only on the exemplifying case but also on the general disease in question. Previous detailed study in the various departmental clinics would have prepared the student for participation in the combined clinic, which would then represent a common effort to develop the matter in hand in a general symmetrical fashion, coordinating the various special phases with which the student has already become acquainted. Many other subjects occur to one as offering the same possibility—diseases of the thyroid gland, diseases of the biliary tract, enteroptosis, infectious types of nephritis, infections of the upper respiratory tract, pneumonia, typhoid, and most of the acute infectious diseases with their surgical complications. The list could be amplified without difficulty, and would grow as the technic of the method developed.

It is scarcely necessary to emphasize the fact that in the foregoing observations there is no thought of belittling or eliminating the training of the student in the specialties. This work consists largely in gaining acquaintance with the technic of special methods of examination and interpretation of the results so obtained, and therefore is not only of prime importance in a purely technical sense but as well an element in the intellectual life of the student of such definite cultural value that the specialist has won an unquestioned place in our curriculums. However, when the student has become acquainted with the more important facts of a subject, one questions whether there is longer great advantage in encouraging him to maintain the attitude of specialism. After the ophthalmoscope has disclosed retinal hemorrhages or albuminuric retinitis, the management of the patient becomes an affair in which internist and ophthalmologist must combine their efforts; it is therefore quite logical and of evident advantage to present the matter in this light to the student at a formal conference held jointly by these two men. A moment's consideration will bring to mind many other examples, and a little more comprehensive application of the idea offers a method of guiding the student's thought, as in the ascites clinic described above, to the end that he acquire a logically developed and rounded idea of disease processes.

MERITS OF THE PLAN

Adoption on a moderate scale of this plan in clinical teaching would not involve great change, if any, in most curriculums; its radical adoption at present is not urged, for such action would be unwise without the certainty of sympathetic and intelligent cooperation and before experience with the method has developed its possibilities. Finally, there is to be recorded our further impression after some study of the plan that in many instances combined teaching could accomplish the purpose in fewer hours than are required at present; our evidence to date is admittedly meager, but it indicates that this is the case. To summarize briefly, we feel that the idea presented in this communication offers the twofold possibility of reducing the number of teaching hours and at the same time enhancing their value and is, therefore, well worthy of thorough and careful trial.

EVIDENCE OF THE ANAPHYLACTIC CHARACTER OF INTERMITTENT HYDRARTHROSIS

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Intermittent hydrarthrosis can be classed as one of the rare diseases. It was first described by Moore,[1] in 1864. Only seventy-eight cases have been reported. Bierring [2] recently reported finding seventy-six cases in the literature, to which he added one, and since then Nielson [3] has reported an additional case. Little is known of its etiology. It has been customary to divide the cases into two groups, idiopathic and symptomatic. The latter type is associated with, or follows, some joint disturbance, especially acute or chronic arthritis, occasionally trauma. Schlesinger,[4] in 1899, reported that fifty-seven of the sixty-seven reported cases could be classed as idiopathic.

The striking characteristic of this disease is the periodicity of the attack, frequently exactly to the day. In every reported case the knee joint has been involved, with occasional additional joints, as the wrist and hip. In the majority of cases, the attack returns at definite intervals, the most common being twelve days. Bierring states that the longest interval recorded is thirty days, and the shortest, two days. The disease is characterized by occasional rather long remissions, during which the trouble completely disappears, or during which, at the regular time for an attack, only slight stiffness of the joint is observed. At times the interval may change, as, in one reported case, from twelve days to six days. This exact periodicity often appears only after the disease is well established. Schlesinger reports a case with an eleven day interval, from November to March each year, but entirely free during the remainder of the year. When more than one joint is involved, the swelling may appear in each simultaneously or in one slightly earlier than the other; but each has a definite cycle, the interval between seizures being the same for all the joints affected. Garrod [5] refers to a patient in whom the knees and one wrist were involved simultaneously, and two days later the hip followed the same course.

1. Moore, C. H.: Lancet **1**: 485, 1864.
2. Bierring, W. L.: Intermittent Hydrarthrosis, J. A. M. A. **77**: 785 (Sept. 23) 1921. This contains a complete bibliography.
3. Nielson, A. L.: Intermittent Hydrarthrosis, J. A. M. A. **78**: 507 (Feb. 18) 1922.
4. Schlesinger, H.: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **5**: 491, 1899.
5. Garrod, A. E.: Quart. J. Med. **3**: 207, 1910.

The average duration of the attack is from four to five days. Rarely does the swelling of the joint reach its maximum until the second or third day; following this, it gradually subsides. During the height of the swelling, the patient is unable to use the extremity on account of soreness due to the tenseness of the swelling. In the free interval, the joint is normal.

Slight rise in temperature and moderate leukocytosis have been reported in a few cases. Garrod refers to one patient, who always had a leukocytosis of from 10,000 to 11,000 during the seizure. Local heat over the involved joint is always present.

The fluid withdrawn has the character of an exudate. The specific gravity is high, fibrin is present, and leukocytes are rather abundant.[6] With few exceptions however, this fluid is sterile. In a case reported by Pulawski, a capsulated diplococcus was found in aspirated fluid on one occasion, although later aspiration gave a sterile fluid.

Schlesinger was first to emphasize the similarity between this disease and angioneurotic edema. A similar periodicity is not infrequently noted in migraine, thus speaking for a relationship between members of this group. He considers intermittent hydrops a localized edema. This view of the etiology of the condition has the largest number of supporters. That nervousness plays a rôle is highly probable. Féré refers to a patient in whom the trouble appeared after anger and was associated with generalized urticaria. Garrod also refers to its appearance in a patient subject to urticaria, and to another case in which the hydrops was occasionally associated with swelling of the eyelids and lips, these swellings being present for only a few hours. Goix mentions a case in which, on one occasion, the swelling in the knee was associated with edema of one side of the face. Senator mentions a boy who, up to the age of 12 years, developed circumscribed swelling of the gluteal region. This disappeared at the age of 12 years, and when the patient was 17, he developed recurrent hydrops of the knee.

In some cases the disease is associated with asthma, migraine or epilepsy. Burchard[7] refers to a case in which the patient had migraine and asthma, and a sister had migraine and urticaria. In this patient, the asthma would always disappear during the hydrops period. He refers to a case reported by Wright in which the same thing occurred.

Several authors refer to the relationship between the hydrops and the menstrual period, in this respect resembling migraine. Most striking, however, is the effect of pregnancy. In the first case reported by Moore, during three pregnancies the trouble disappeared from the third month until the third month of lactation. Pulawski mentions a case in which the patient was free during pregnancy and until her first menstrual period, when the trouble returned. He also mentions one patient free during pregnancy, with recurrence one week after a miscarriage at seven months. Bierring reports nine cases in which pregnancy occurred; eight of the patients were free from the trouble during this period. This relief during pregnancy corresponds to what is frequently observed during migraine, and less frequently in epilepsy and asthma. Furthermore, its occasional association with urticaria and asthma suggests the possibility that this disease may be of an anaphylactic character. Its periodicity, the effect of nervous factors and its modification by pregnancy might be considered as evidence of its anaphylactic character.

In a disease so rare it would not be expected that we could obtain evidence of its hereditary character. However, there is one case reported in the literature by Blanc in which a mother and a daughter were both affected.

REPORT OF CASE

A railroad fireman, aged 37, walked into the office of Dr. Samuel C. Plummer in February, 1923, carrying a pair of crutches. When asked why he had crutches, the patient stated that he would need them within a short time. He had suffered from recurrent pain and swelling in the left knee for sixteen years. He did not recall how frequently the attacks occurred until two years before, when he observed that they came every thirteenth day, the entire period of his disability lasting about six days. The swelling reached its height about the third day, and then gradually subsided. He was off duty twelve days of every month.

With the exception of the diseases of childhood, he had always enjoyed good health except for this trouble. He did not use tobacco or alcohol. He denied venereal infection.

His father had hay-fever. There was no history of urticaria, migraine or epilepsy in the family. The patient was admitted to St. Luke's Hospital, Feb. 15, 1923, in the service of Dr. Philip Lewin. The physical examination did not reveal anything abnormal, except slight swelling of the left knee. The capsule was loose. There was slight fluctuation; there was no pain or impaired motion, redness or abnormal skin temperature. The left knee measured 14½ inches; the right, 14 inches. Roentgen-ray examination of the left knee did not reveal anything abnormal. Eosinophilia was 1 per cent. By February 18, the swelling reached its height, the knee measuring 15½ inches; it was not painful to pressure. The patella was floating. The mobility of the knee was much impaired. February 21, the knee had returned to normal.

In the belief that the disease might be due to hypersensitiveness, an attempt was made to desensitize the patient by the intravenous use of peptone. This gave rise to marked urticaria, demonstrating the hypersensitiveness of the patient to this agent. We then resorted to the intravenous use of typhoid vaccine, as Drs. Miller and Raulston[8] had observed that the same results could be obtained with this agent as with peptone in the treatment of migraine.

The patient was given 50 million dead typhoid bacilli intravenously, February 25, his attack being due, February 28. He was given the same dosage, February 26 and 28. Following these injections, the urticaria returned. This is very unusual, as in several hundred injections of typhoid vaccine given in arthritis, urticaria has never been observed. The swelling of the knee began on schedule, but was definitely milder than during the previous attacks. The swelling was very slight, and began to recede on the second day.

March 3, the patient left the hospital, returning to his home in Missouri. His family physician, Dr. E. A. Duffy, was advised to use typhoid vaccine shortly before the seizure was due. The patient received an injection, March 24, April 7, April 11 and May 4. He reported, April 10, that the attacks were definitely milder and that the exact periodicity had disappeared, the attacks now coming on the twelfth to the fourteenth day.

May 25, he reported that the attacks were not so severe, the swelling being marked but the pain less.

June 14, he reported that the knee swelled, May 29, but that there was no pain with it. The knee swelled again, June 11, but this attack was mild.

July 28, he reported that he had had no trouble with his knee since June 11.

September 29, he had no more attacks, and had been working every day.

December 24, he had had no attack since June, although occasionally he noticed slight stiffness of the knee but not enough to interfere with his work.

6. Pulawski, A.: Wien. klin. Wchnschr. **27**: 421, 1914.
7. Burchard, Oscar: Deutsch. med. Wchnschr. **28**: 380, 1902.
8. Miller, J. L., and Raulston, B. O.: Treatment of Migraine with Peptone, J. A. M. A. **80**: 1894 (June 30) 1923.

COMMENT

It is possible that this improvement might be due to a recession, reported at times in the course of this disease. As this was the first relief experienced by the patient since the disease began sixteen years before, it speaks rather strongly for the beneficial results of the treatment.

If due to the treatment, was it a foreign protein effect, or was it due to nonspecific desensitization? It is not believed that intermittent hydrops is an infection. Culture of the fluid has, with a few exceptions, given negative results. No fever accompanies the attacks. There is abundant evidence that desensitization can be accomplished by nonspecific means. It is true that the results are not so complete or lasting as when a specific agent is used. Rosenow and Anderson showed that injection of bacterial protein could prevent anaphylaxis in animals. It is possible that the same thing might occur in intermittent hydrops in case it is a sensitization disease.

CONCLUSIONS

Intermittent hydrarthrosis presents many features that suggest its relationship to recognized sensitization diseases. Foreign protein treatment in one case was followed by disappearance of seizures. Whether this result was due to nonspecific desensitization or to the effect of foreign protein, as observed in infection, is an open question. The evidence, however, suggests desensitization.

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A NEW INCISION FOR CLAVICLE OPERATIONS

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Especially in women and young girls, it is often desirable to avoid a disfiguring scar in operations in the clavicular region. Keloid formation in the line of

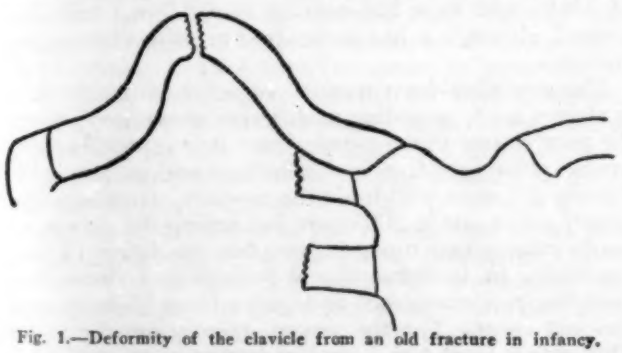

Fig. 1.—Deformity of the clavicle from an old fracture in infancy.

Fig. 2.—The outer and inner end of the clavicle grooved for the tibial graft; outer ends split longitudinally and lifted to overlap the graft.

incision is not uncommon following torticollis and other operations in the region of the clavicle. In a case in which it was necessary to remove a large deformity of the clavicle due to an old ununited fracture, and in which, for cosmetic reasons, it was important not to have a large scar replace the deformity, I used the incision here described, which gave ample room for the operation, which was fairly extensive. As the supraclavicular

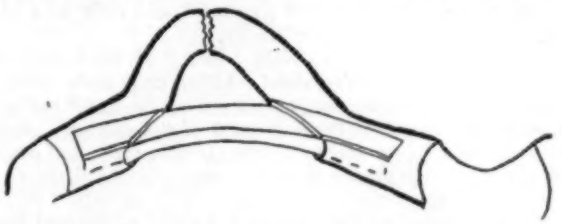

Fig. 3.—The graft in place, the disfiguring deformity retained as a splint until the graft is solid.

Fig. 4.—The deformity removed.

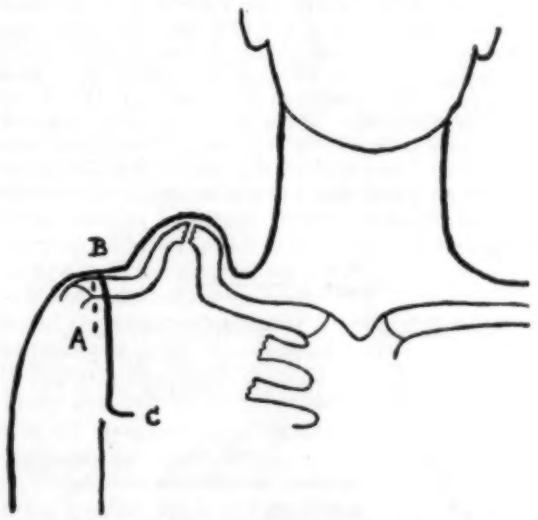

Fig. 5.—A nondisfiguring approach to the whole clavicle, parts of the sternum or upper ribs. Incision from dotted line posteriorly at *A* (spine of scapula) anteriorly down to *C* (fourth rib) and 1 inch inward at *C* exposing the clavicle and supraclavicular region from the acromion to the intraclavicular notch. This scar is easily covered by a dress strap, leaving no scar on the neck, clavicle or sternum.

region, lower neck, upper chest and outer sternal region could well be reached by the same approach, I venture to recommend this incision for operations not necessarily restricted to the clavicle, when the surgeon wishes to avoid a scar that will show.

INCISION

The incision extended from the spine of the scapula over the deltoid at *A* posteriorly, upward over the shoulder and downward anteriorly to the level of the fourth rib just internal to the anterior axillary line and then at right angles 1 inch inward, the line of incision being placed where it could be easily covered by a dress shoulder strap. The skin and subcutaneous fat were dissected from the pectoral muscle and laid back, not appreciably lengthening the time of the operation. A brief account of the operation will be mentioned to show the possibility of the incision. The deformity was caused by a right angle bend upward in the clavicle at about its middle, the proximal fragment as well as the distal being bent upward at right angles, joining in a fibrous union which stuck out covered with skin and fat but looking like a large nodular swelling, which could be seen from behind or from the front, and very noticeable and disfiguring. The deformity resembled an A at the middle of the clavicle. A small linear scar remained from a previous operation done in childhood. The operation was performed at that time in a large hospital,

but failed to correct the deformity. The patient, a young woman otherwise well developed, was conscious of the nonunion. The deformity was evident with any form of light dress. It was planned to replace the middle three fifths of the clavicle by a bone graft. It was decided to leave the deformed bone until the graft was solid, and then, at a second operation, to remove the deformity.

At either end of the clavicle a piece of bone, measuring three-fourths inch, was raised like a trap door from the upper surface, with the hinge outward at the outer end of the clavicle and inward, at the inner end of the clavicle. A tibial graft was inlaid in a groove in the clavicle ends, and over the end of the tibial graft the trap door was dropped down to give additional bony contact to the graft. This operation required complete exposure of the clavicle from the midsternal line to the acromion. When the operation on either end of the clavicle was complete, the incision was closed by interrupted subcutaneous catgut sutures and continuous silk skin sutures. The second operation for removing the deformity was performed through the same incision. The convalescence was uneventful.

CONVALESCENCE

There was no rise of temperature at any time for six weeks following the operation. There was a small clot formation over the pectoral muscle after the first operation; this was easily pressed outward and out through the line of the incision without removing a stitch. The incision healed in a good line uneventfully. The operation was painless except for some slight leg discomfort where the graft was removed. This approach to the clavicle is reported, as it may be used for exposure of the lower neck or any part of the clavicle or for the sternum or upper ribs, without leaving a scar on the neck or pectoral region.

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CONVALESCENT WHOLE BLOOD, PLASMA AND SERUM IN PROPHYLAXIS OF MEASLES *

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The universal susceptibility of the human race to measles, and the relatively high mortality from the disease under conditions of poverty and crowding, render it desirable to have available an efficient method of protection, that could be used whenever conditions render it desirable. Such a method has been worked out and found to be of value during the last few years. It consists of the administration of small doses of convalescent measles serum as soon as possible after exposure to a case of measles.

The use of convalescent serum in the prophylaxis of measles was a logical sequel to the application of human convalescent serums in preventing and curing other infectious diseases for which the causative agents, as in measles, have not yet been definitely isolated and identified. Scarlet fever [1] and poliomyelitis [2] are additional examples of infections in which the serum of convalescents and of recovered patients has been successfully used in prophylaxis as well as in therapy.

The serums of adults who have had these infections in childhood also contain antibodies, although they are present in a lower concentration. Such antibodies are transmitted from the mother to the offspring through the placenta. This is shown by the temporary protection of many infants under 6 months of age against different infectious diseases, such as measles, scarlet fever and poliomyelitis. In the transmitted immunity to diphtheria there is even a close quantitative parallelism in the antitoxin content of the mother's blood and that of the new-born infant.

The presence of these protective antibodies in the parents' serum is extremely important, as it enables us to utilize a source of serum supply that is universal and readily available, whereas with convalescent serum we are dependent on a limited number of donors. In this connection it may be mentioned that I strongly recommended, during the epidemic of poliomyelitis in 1916, that the blood serum obtained from parents be injected in doses of from 30 to 60 c.c. into young and susceptible children, so as to reestablish a temporary passive immunity during the period of the epidemic.

MORBIDITY AND MORTALITY FROM MEASLES

The degree of susceptibility of the human race to measles is shown by the fact that from ninety-six to ninety-eight out of every hundred children that have not had the disease and are intimately exposed to infection will promptly come down with measles.

The susceptibility of children to measles is well illustrated by a statement of Pfaundler's [3] that he had not once succeeded in protecting brothers and sisters of the same family by timely isolation, even though the attempt was made as soon as the first symptoms of the disease manifested themselves. Any method of serum prophylaxis, therefore, that will show by its results that measles can be prevented for a period of time indicates that the serum contains specific antibodies against the virus of the disease. Such protective power has been definitely shown for convalescent serum obtained from measles patients, and to a somewhat less extent for serum obtained from other children and from adults who have had the disease several months or years previously. Of great importance is the fact that the serum of adults who have had measles in childhood will also protect, although it has to be used in somewhat larger amounts.

The mortality from measles varies considerably, but is always high, according to different observers, among the poor classes in the population. It is especially high among young children in institutions and in hospitals. Among the more well-to-do the mortality from measles is only about one in 200 cases, but among the poor it is nearly twenty-two times higher, the rate being 11 per hundred. In institutions and foundling asylums the mortality rate may reach as high as from 27 to 46 per hundred cases. For the general population, the mortality rate is from 6 to 7 per hundred cases.

At the Willard Parker Hospital, the death rate from measles is very high in certain years. The high mortality can be attributed to the very sick type of patients that are sent in by private physicians and various institutions. Many of these patients often have, on admission, a severe complicating bronchopneumonia.

That measles is a very serious disease and not to be regarded with indifference has been appreciated by physicians and health officers for many years. This fact can be readily noted from mortality statistics of this disease reported from different countries. In Germany, Pfaundler estimates that more than 30,000

* Read before the Section on Pediatrics of the New York Academy of Medicine, Jan. 10, 1924.

1. Neff, F. C.: Arch. Pediat. **39**: 250 (April) 1922. Zingher, Abraham: The Use of Convalescent and Normal Blood in the Treatment of Scarlet Fever, J. A. M. A. **65**: 875 (Sept. 4) 1915.

2. Zingher, Abraham: The Diagnosis and Serum Treatment of Anterior Poliomyelitis, J. A. M. A. **68**: 817 (March 17) 1917.

3. Pfaundler, M.: München. med. Wchnschr. **68**: 277 (March 4) 1921.

deaths occur annually from measles. In the United States, according to Rosenau, there were more than 100,000 deaths during the twelve-year period from 1900 to 1911. In New York City the total number of deaths for the year 1922 was 977, a mortality rate of 17 per hundred thousand population. The total mortality in New York City varies from year to year, the average for the last few years being about 600 deaths annually.

The death rate from measles is highest in children under 5 years, and especially in children under 2 years of age. In the group under 5 years we find more than 90 per cent. of all deaths from measles. If the disease could be prevented during the early years of childhood, many lives would undoubtedly be saved. Here we see one of the important indications for convalescent serum.

TABLE 1.—*Deaths from Measles in New York City for Year 1922*

Age in Years	Total Deaths	Total Deaths in Each Group	Per Cent. of Total Deaths in Each Group	Per Cent. of Deaths Under 5 Years
Under 1	236			
From 1 to 2	410			
Total		646	66.1	93.4
From 2 to 3	160			
From 3 to 4	64			
From 4 to 5	43			
Total		267	27.3	
From 5 to 9	54			
10 and over	10			
Total		64	6.6	
Total		977		

Total deaths from Jan. 1 to July 30, 1922	935	(95.7%)
Total deaths from July 1 to Dec. 31, 1922	42	(4.3%)

Table 1 shows the deaths from measles in New York City for the year 1922. One can note the high death rate in children under 5 years, and especially under 2 years of age. As to seasonal incidence, 95.7 per cent. of measles deaths occurred during the first six months of the year. During the months of March, April and May there were 647 deaths, or 66.2 per cent. of the total deaths.

HISTORICAL

The first published results on the use of convalescent measles serum were by Nicolle and Conseil,[4] and appeared in 1918. These observers in 1916 succeeded in protecting a child after exposure to measles. In 1916, Park and Zingher injected forty-eight exposed children with convalescent measles serum at the Metropolitan Hospital on Welfare Island. Twenty-eight of these children received doses varying from 1.5 to 4 c.c., and twenty received doses of 8 c.c. In the first group, six children developed measles; one, two days; one, seven days; one, eight days; one, fifteen days; one, seventeen days, and one twenty-five days after the serum injection. In the second group, none developed measles. These results were not published.

In 1918, Richardson and Connor [5] of Boston reported the successful use of convalescent serum in a small group of exposed children. In 1919 Degkwitz,[6] working in Pfaundler's clinic in Munich, began a systematic series of observations with convalescent serum in the prophylaxis of measles. He subsequently organized the work on a broad scale in Munich and up to the present time has injected more than 1,000 children with convalescent serum. He was followed by various observers in Germany, Hungary, Italy, Spain, South America and the United States. Among these authors may be mentioned Zschau,[7] Torday,[8] Kutter,[9] Glaser and Müller,[10] Manchot and Reiche,[11] Maggiore,[12] de Castro,[13] Galli,[14] Nobécourt and Paraf,[15] Marie,[16] Zimmermann,[17] de Stefano,[18] Torres and Pacheco,[19] Blackfan, Peterson and Conroy,[20] Ratnoff,[21] McNeal,[22] de Jong and Bernard,[23] and Weaver and Crooks.[24] Rietschel [25] laid stress on the use of adult serum or whole blood from parents. Debré and Ravina [26] emphasized the greater value of modifying the disease by the use of convalescent serum so as to obtain a mild form of measles, rather than attempting completely to prevent its development.

DONORS AND METHOD OF OBTAINING BLOOD

The donors should be healthy persons, preferably adults, who are free from syphilis and tuberculosis. When adult donors are not available, it may be justified to take, under special conditions, a small amount of blood from children over 10 years of age. It is difficult, however, to see the advisability of the recommendation made by Degkwitz, that as much as 60 c.c. of blood should be taken from children under the age of 5 years. I am afraid that bleeding such young children will get this method sooner or later into disrepute. Parents might be willing to allow a small amount of blood to be taken from convalescent children or from brothers and sisters who have had measles previously, for use in the same family; but most parents would decidedly object to have children under 5 years or even under 10 years of age bled for general serum distribution.

From adult donors, about 500 or 600 c.c. of blood could be readily obtained. A second bleeding from the same donor could be obtained two or three weeks later, if further observations show that these late serums are fairly equivalent to convalescent serums in concentration of antibodies. Suitable compensation should be made to the donor for the blood withdrawn.

The blood should be collected under sterile precautions by allowing it to flow into a 500 or 1,000 c.c. bottle. The container is closed with a double perforated stopcock, through which pass two pieces of glass tubing. To one is attached a piece of rubber tubing and a large bore (16 gage) needle, similar to those generally used in blood transfusions. The other piece of glass tubing is plugged with a little cotton, and to it is attached a piece of rubber tubing, which serves the purpose of producing a partial vacuum in the bottle by means of suction. The entire apparatus should be wrapped and sterilized. The blood can be collected and allowed to

4. Nicolle, C., and Conseil, E.: Bull. et mém. Soc. méd. d. hôp. de Paris **42**: 336, 1918; Arch. de l'Inst. Pasteur de l'Afrique du Nord. **1**: 193, 1921.
5. Richardson, D. L., and Connor, Hilary: Immunization Against Measles, J. A. M. A. **72**: 1046 (April 12) 1919.
6. Degkwitz, R.: Ztschr. f. Kinderh. **27**: 171, 1920; **25**: 134 (May) 1920; 134, 1920; Monatschr. f. Kinderh. **22**: 186 (Nov.) 1921; Deutsch. med. Wchnschr. **48**: 26 (Jan. 5) 1922.
7. Zschau: München. med. Wchnschr. **68**: 1049 (Aug. 19) 1921.
8. Torday, F.: Ztschr. f. Kinderh. **29**: 148 (June) 1921; Jahrb. f. Kinderh. **102**: 213, 1923.
9. Kutter, P.: Ztschr. f. Kinderh. **30**: 90 (Aug.) 1921.
10. Glaser, F., and Müller, H.: Med. Klin. **17**: 649 (May 29) 1921.
11. Manchot, C., and Reiche, F.: Med. Klin. **17**: 1230 (Oct. 9) 1921.
12. Maggiore, S.: Pediatria **29**: 873 (Oct. 1) 1921.
13. De Castro, J. E. y. B.: Arch. españ. de pediat. **6**: 517, 1922.
14. Galli, P.: Pediatria **30**: 898 (Oct. 1) 1922.
15. Nobécourt, P., and Paraf, J.: Presse méd. **30**: 497 (June 10) 1922.
16. Marie, P. M.: Presse méd. **30**: 456 (May 27) 1922.
17. Zimmermann, L.: Deutsch. med. Wchnschr. **48**: 1701 (Dec. 22) 1922.
18. De Stefano, S.: Pediatria **31**: 781, 1923.
19. Torres, M., and Pacheco, G.: Arch. Latino-Am. de Pediat. **14**: 305, 1920.
20. Blackfan, K. D.; Peterson, M. F., and Conroy, F. C.: Ohio State M. J. **19**: 97 (Feb.) 1923.
21. Ratnoff, H. L.: Arch. Pediat. **40**: 683, 1923.
22. McNeal, M. D.: The Serum Prophylaxis of Measles, J. A. M. A. **78**: 340 (Feb. 4) 1922.
23. De Jong, S. I., and Bernard, E.: Bull. et mém. Soc. méd. d. hôp. de Paris **48**: 500, 1923.
24. Weaver, G. H., and Crooks, T. T.: The Use of Convalescent Serum in the Prophylaxis of Measles, J. A. M. A. **82**: 204 (Jan. 19) 1924.
25. Rietschel: Ztschr. f. Kinderh. **29**: 127 (June) 1921.
26. Debré, R., and Ravina, J.: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 226 (Feb. 9) 1923.

clot, and the serum subsequently drawn off, or it may be kept fluid by the addition of 0.5 per cent. sodium citrate and the supernatant plasma afterward decanted. One volume of 5 per cent. solution of sodium citrate to every nine volumes of blood is previously placed in the bottle. The decanted serum or plasma is subsequently tested for sterility, pooled with the serums of two other donors, and divided into individual ampules containing 3 c.c. Degkwitz considers 2.5 c.c. as one immunizing unit. For the better preservation of the serum, it has been recommended to dry it in the ampules in vacuo, and then dissolve the residue with salt solution before use. The fluid serum has been found to retain its protective properties for six months.

OPTIMUM TIME FOR BLEEDING DONORS; POOLED SERUM

According to Degkwitz, the best time for bleeding convalescent donors is from the sixth to the tenth day after the temperature has reached normal. Blood serum obtained from persons who recovered from measles several months or even several years previously has also been used with success. The dose, however, should be larger.

The Wassermann test is made on the serums unless the donors have been previously tested. Three different serums should be pooled together. It is possible that an occasional convalescent donor may be a poor antibody producer, just as certain horses are poor antitoxin producers; the pooling, however, will minimize the danger of using ineffective serums.

DOSE OF SERUM AND PERIOD OF EXPOSURE

The dose recommended by Degkwitz is 2.5 c.c., or 1 immunizing unit, for children who have been exposed for not more than four days; 5 c.c., or 2 units, for children exposed for from five to six days, and 7.5 c.c., or 3 units, for children exposed for seven days to infection with the measles virus. According to the same observer, the injection of serum on the eighth day of exposure and later will not prevent the development of the disease, nor will it modify the character of the symptoms. Our own experience and that of some of the French observers does not bear out this statement. The disease can be prevented in some of the patients, and is distinctly modified in some of the others, when the serum is injected as late as the eighth or ninth day of exposure. The serum is injected intramuscularly into the arm, thigh or gluteal region.

The dose recommended is for a child 3 years of age. For older children the dose should be in proportion to the age and weight of the child.

The period of exposure is calculated as follows: When the exposed children have been constantly in contact with the measles patient and the latter is seen on the first day of rash, the period of exposure is counted as four days; if seen on the second day of rash, as five days, etc. If the patient is seen at the time of the appearance of Koplik's spots and no rash, the exposure of the contacts is three days. Occasionally a patient is brought into a hospital and the rash appears on the following day or two days later. The exposure of the contacts will be one or two days.

COMPLETE PASSIVE IMMUNIZATION

There are distinct indications for attempting to produce complete passive immunization by increasing doses of serum. As thorough and as complete protection as possible should be given to many children who are very young or feeble; children suffering from rickets, tuberculosis, diphtheria or whooping cough; those convalescing from other infectious diseases, and children who would be in immediate danger from an attack of measles, such as undernourished patients or feeding infants. In institutions, also, and in hospitals, where the paramount indication is to stamp out an outbreak of measles, the early and prompt administration of convalescent serum is strongly indicated and will often prove a life saving boon. The colder seasons of the year, with the greater danger of respiratory complications, will also often be found an indication for complete immunization.

MODIFIED, MILD MEASLES

In private practice, when we are dealing with normal and healthy children, special conditions may also indicate the advisability of producing a complete but temporary protection.

Every clinician realizes, however, that it would be much better under ordinary conditions if our efforts should result in a permanent immunity of the children with the least risk involved. Such a permanent protection can be obtained by an attack of measles. If the disease could be modified, however, so that a mild attack of measles will develop, we shall have accomplished our aim. Such modified measles can often be produced if children are injected from the fifth to the tenth day after exposure with 2.5 c.c. of convalescent serum, or with 5 c.c. of serum from brothers and sisters who have recovered from measles some time previously, or with 10 c.c. of adult serum. The principle involved in this method has been recommended by Debré and Ravina,[20] and it would appear to be a more reasonable and logical procedure in private practice than the attempt to produce a complete but short immunization. My own observations also indicate that a peculiarly modified, mild form of measles can be obtained when small doses of convalescent serum are injected as late as the eighth day of exposure.

The modified form of measles is characterized by a moderate rise of temperature lasting for one or two days, and by a curious rash, scarcely resembling ordinary measles, which is scattered over face and body, and to a less extent over the extremities. The individual macules are about the size of the head of a pin, occasionally surmounted by a tiny vesicle. At times there are larger macules scattered between the small ones. Conjunctivitis, coryza and Koplik's spots are frequently absent; when present, these symptoms are very mild. The clinical picture is one of a mild form of measles as compared with the type usually seen. According to various observers, complications are very rare. In the group of cases that came under my observation, no complications were noted. Degkwitz also states that the modified form is not very infectious. This is probably on account of the slight or absent catarrhal symptoms with the lessened possibility of droplet infection.

Convalescent serum, if always available, would be most suitable for the purpose of modifying the attack of measles. Practically, however, convalescent serum will frequently not be obtainable. Under all conditions, the blood of brothers and sisters or of parents can nearly always be obtained. The serum or plasma does not have to be first separated and then injected. With an ordinary 10 or 20 record or Luer syringe the blood is simply withdrawn and immediately injected intramuscularly. To enable the physician to work without

haste, from 1 to 2 c.c. of a 5 per cent. solution of sodium citrate can be drawn into the syringe before the blood is taken from the donor. The whole blood is injected into the thigh muscles or into the gluteal region according to the intramuscular method that I [27] have recommended for the treatment of scarlet fever with convalescent whole blood. When whole blood is used, instead of serum, double the amount recommended for serum should be injected.

DURATION OF IMMUNITY CONFERRED BY CONVALESCENT SERUM

The duration of passive immunity produced by injecting convalescent serum in the doses recommended during the first few days after exposure is rather short, not lasting more than from four to five weeks. When convalescent serum is injected on the sixth day or later, a mixed type of immunity is produced, which lasts for from two to three months. If a modified attack of measles develops, the immunity is probably permanent.

The reports of different observers indicate that the passive immunity will last only from thirty to forty-five days. Following a second exposure, one of our patients developed typical measles forty-two days after a protective dose of serum.

By mixed immunity is understood a type of protection that develops in a child who received a dose of convalescent serum after the sixth day of exposure. Such a child does not develop clinical measles, but the blood serum, according to Degkwitz, shows a definite increase in protective power, as can be demonstrated by injecting it into other exposed children. This indicates that the measles virus had partly reacted on the child's organism at the time the convalescent serum was injected. A mixed active and passive immunity results, which lasts longer (from two to three months) than the purely passive protection obtained on injecting children with convalescent serum during the early days of exposure.

Table 2 gives the dosage of convalescent serum, or serum from recovered patients (brothers and sisters) and from adults. It also indicates the type of immunity in which the protection is complete, and the type of disease in which the protection is incomplete.

CENTRAL SERUM STATIONS

Degkwitz has recommended that hospitals in a city serve as serum centers. Convalescent donors (patients of private physicians) were to report at these places, and, for a definite compensation, allow a certain amount of blood to be taken. The serum would then be prepared in the laboratories connected with the hospitals. As a matter of practical importance, we have found that it is difficult to induce convalescent donors to report at hospitals for the purpose of having blood taken. In contagious disease hospitals it is somewhat less difficult to obtain convalescent serum, especially if an effort has been made to send in adult patients.

TABLE 2.—*Measles Prophylaxis*

Days of exposure		1	2	3	4	5	6	7	8	9	10	11	12
Onset of clinical symptoms in measles		Catarrhal		Koplik spots	1st day of rash								
Amount of serum for complete protection	Convalescent	2.5 to 3 c.c.				5 c.c.		7.5 c.c.					
	Recovered cases (brothers and sisters)	5 to 6 c.c.				7.5 c.c.		10 c.c.					
	Adults (parents)	10 c.c.				15 c.c.		20 c.c.					
Type of immunity in complete protection		Passive				Mixed				None			
Amount of serum for incomplete protection	Convalescent	1.5 c.c.				2.5 c.c.							
	Recovered cases (brothers and sisters)	2.5 c.c.				5 c.c.							
	Adults (parents)	5 c.c.				10 c.c.							
Type of measles in incomplete protection		Modified											Typical

The New York City Department of Health is offering at the present time to practicing physicians of the city a limited amount of convalescent plasma in individual vials containing 3 and 5 c.c. A request is made that the physicians report to the department careful observations of the results obtained.

ACTIVE IMMUNIZATION AGAINST MEASLES

The discussion of immunization against measles should include a brief survey of the attempts that have been made to produce an active immunity against the disease. These attempts consist in (*a*) the application of the nasal mucus from measles patients to the nasal mucous membrane of young children; (*b*) the combination of this method with passive immunization with convalescent serum, and (*c*) the injection of very small doses of blood containing measles virus, which is obtained from patients during the early stages of the disease.

Herrman [28] noted that children who were exposed to measles before the age of 5 months would not only

27. Zingher, Abraham: Arch. Pediat. **31**: 912, 1914.

28. Herrman, C.: Arch. Pediat. **32**: 503, 1915.

remain protected at the time of exposure, but would not develop the disease, as far as could be learned by following a few cases when subsequently exposed, after several months or even after one or two years. On the basis of these observations, he has recommended active immunization by applying with a swab the nasal mucus from an early case of measles to the nasal mucous membrane of children at about the age of 5 months. This method would be limited to very young children, as in older children it would probably produce a typical attack of measles. The combination of passive immunity with convalescent serum and Herrman's method avoids this danger, and children of any age could thus be immunized. The serum should be injected from twenty-four to forty-eight hours after the swabbing of the nasal mucous membrane. Herrman's method has not been practiced by other observers. It is evidently not sufficiently practical to be carried out on an extensive scale.

Degkwitz[29] reported on the use of measles virus which had been enriched in cultures containing human albuminous fluids. No details were given by the author, and no further publications have since appeared on the subject.

Hiraishi and Okamoto[30] have recommended the injection of very small amounts of blood obtained from cases of measles during the early stages of the disease. They inject subcutaneously 0.0001 c.c. of blood, which is followed two weeks later by a second injection of 0.001 c.c. in children under 5 years of age, and 0.002 c.c. in children over 5 years of age. Their results were not uniformly favorable, and further work on a more extensive scale would have to be carried out with this method before definite conclusions could be reached.

PERSONAL OBSERVATIONS WITH CONVALESCENT WHOLE BLOOD AND SERUM

The ease and simplicity of using citrated whole blood in hospital work first induced me to immunize the exposed children in this way. The more recent work was carried out with convalescent serum or plasma.

The donors were from five to fifteen days convalescent patients. In some instances we used the blood of individual donors; in others, the pooled blood, plasma or serum of several donors.

The total number of exposed persons injected was 160. Tables 3 and 5 give a summary of the different groups. Each group represents one or more individuals, who were exposed at the same time either in hospital wards at the Willard Parker Hospital, in institutions or in private homes.

GROUPS OF CASES IN WHICH MEASLES CONVALESCENT BLOOD, PLASMA OR SERUM WAS INJECTED

GROUP 1.—Five children were exposed in the diphtheria pavilion, May 24. Eight days later each child was injected with 20 c.c. of convalescent whole blood from a donor five days convalescent. Two of the five children developed modified measles, one ten days after receiving the injection and after an incubation period of eighteen days; the other one fourteen days after the injection and after an incubation period of twenty-two days. The rash consisted of a few scattered macules, the size of the head of a pin. In the first child the rash was limited to the face; in the second one it was also present on the trunk, but not on the extremities. Neither one of the children showed catarrhal symptoms, conjunctivitis or Koplik's spots. There was slight elevation of temperature for two days. The clinical picture was that of a mild atypical form of the disease, which could not have been identified as measles except for the history of exposure. These cases indicate that measles developing in children who receive convalescent serum eight days or more after exposure may show a modified form. The other three children of this group were protected. One child, aged 3 years, exposed at the same time, received no convalescent blood, and developed typical measles fifteen days after exposure.

TABLE 3.—*Convalescent Whole Blood, Plasma and Serum in the Prophylaxis of Measles*

	Patients Injected								Controls	
Group	Number Injected	Age, Years	Convalescent Whole Blood	Convalescent Serum or Plasma	Days of Exposure	Number Developed Measles	Period of Incubation	Type of Rash	Total Number and Age	Number That Developed Measles, Period of Incubation and Type
1	5	2, 2, 3, 5, 6	20 c.c.	.....	8	2	18 days 22 days	Moderate	1 (3 yrs.)	1 (15 days) Typical
2	1	1½	20 c.c.	.....	5	0	.....	.....	.....	.....
3	8	2, 2, 2, 2½, 2½, 4, 5, 5	20 c.c.	.....	4	0	.....	.....	.....	.....
4	2	4, 4	20 c.c.	.....	7	1	27 days	Typical	.....	.....
5	4	2, 2½, 2½, 5	20 c.c.	.....	7	0	.....	.....	1 (5 yrs.)	1 (13 days) Typical
6	4	1½, 2, 2, 4	20 c.c.	.....	2	0	.....	.....	.....	.....
7	1	3	20 c.c.	.....	4	0	.....	.....	.....	.....
8	1	2	20 c.c.	.....	5	0	.....	.....	.....	.....
9	2	3, 6	10 c.c.	.....	3	0	.....	.....	.....	.....
10	2	22, 25	15 c.c.	.....	6	0	.....	.....	.....	.....
11	1	1½	10 c.c.	.....	4	0	.....	.....	.....	.....
12	2	4, 6	.....	10 c.c. S.	5	0	.....	.....	.....	.....
13	3	2, 3, 4	.....	5 c.c. S.	4	1	(42 days)* 14 days	Typical	.....	.....
14	1	3 days	.....	5 c.c. S.	3	0	.....	.....	.....	.....
15	1	2½	.....	5 c.c. S.	5	1	16 days	Moderate	.....	.....
16	4	6 m., 6 m., 7 m., 10 m.	.....	2.5 c.c. S.	6	0	.....	.....	3 (1 to 3 years)	2 (12 days) Typ. 1 (13 days) Typ.
17	30	1 to 5 yrs.	.....	2.5 c.c. S.	6-8	4	16, 17, 17, 20	Moderate	.....	.....
18	5	1½, 2, 2, 2, 2½	.....	3.0 c.c. P.	1-4	0	.....	.....	.....	.....
19	4	3, 5, 5, 8	.....	3.0 c.c. P.	1	0	.....	.....	.....	.....
20	5	4, 5, 5, 8, 9	.....	3.0 c.c. P.	4	1	14 days	Typical	.....	.....
21	5	2, 3, 3, 3, 7	.....	3.0 c.c. P.	4	0	.....	.....	.....	.....
22	5	6 m., 7 m., 1½, 1½, 2	.....	3.0 c.c. P.	5	0	.....	.....	.....	.....
23	3	1, 2, 4	.....	3.0 c.c. P.	6	0	.....	.....	.....	.....
24	3	2, 2, 2½	.....	3.0 c.c. P.	6	0	.....	.....	.....	.....
Total.....	102				...	10	.....	7 Mod. 3 Typ.	5	4 Typical

* Forty-two days after the injection of serum and fourteen days after the second exposure.

GROUP 2.—This child was in the same cubicle with the control just mentioned. She was injected on the day after the rash appeared (the fifth day of exposure) and was protected.

GROUPS 3 and 4.—Ten children were exposed in one of the scarlet fever wards. May 2, the fourth day of exposure, eight

29. Degkwitz, R.: Monatschr. f. Kinderh. **22**: 186 (Nov.) 1921.
30. Hiraishi, S., and Okamoto, K.: Japan M. World **1**: 10 (May 12) 1921.

of the ten children, varying in age between 2 and 5 years, were each injected with 20 c.c. of convalescent blood. These children were protected. The supply of convalescent blood being exhausted, the remaining two children were not injected until May 5, the seventh day of exposure. One of these, a child, aged 4, an older brother of a boy, aged 2, injected in the group of eight children, developed a typical rash on May 25, twenty days after the injection of blood and twenty-seven days after exposure. He had a modified rash and mild catarrhal symptoms.

GROUP 5.—Four children were exposed in one of the wards of the reception hospital. Each of the children was injected with 20 c.c. of convalescent blood on the seventh day of exposure. No measles developed. A fifth child, aged 5 years, was not injected on account of a questionable history of measles, and developed a typical measles attack on the thirteenth day of exposure.

GROUP 6.—Four children were exposed in one of the diphtheria wards to a patient with measles who developed a rash on the day after admission to the hospital. On the following day, the second day of exposure, each of the four children was injected with 20 c.c. of convalescent blood. No measles developed.

GROUP 7.—This child was in a separate room in the scarlet fever pavilion and was exposed to a second child who developed a typical measles rash four days after admission to the hospital. Twenty cubic centimeters of convalescent blood was injected, and the child was protected.

GROUP 8.—A child, aged 2 years, injected on the eighth day of exposure with 20 c.c. convalescent blood, was protected. The child was in a separate room in the scarlet fever pavilion, and was exposed to a patient who had developed a measles rash four days previously.

GROUP 9.—Two children were convalescing from chickenpox in one of the wards of the reception hospital, when they were exposed to a case of measles. On the day Koplik's spots were seen in the patient, the third day of exposure, each of the two children received 10 c.c. of whole blood and both were protected.

GROUP 10.—Two adults, who were nurses in training at the Presbyterian Hospital, never had had measles, and were exposed to a colored maid who had developed a measles rash two days previously. Each of the two nurses received 15 c.c. of whole blood on the sixth day of exposure, and both were protected.

GROUP 11.—On the same day the nurses were injected, there was admitted to the emergency ward of the Presbyterian Hospital a little girl with Koplik's spots and a beginning rash. A younger brother, aged 1½ years, was seen at his home the same evening and injected with 10 c.c. of whole blood. The child was protected.

The following thirteen groups of children were injected with convalescent measles serum or plasma.

GROUP 12.—Two children convalescing from scarlet fever were exposed to a child in an adjoining crib, who developed a measles rash the day before. Each child received 10 c.c. of convalescent serum on the fifth day of exposure. Both children were protected.

GROUP 13.—Three children were exposed in the diphtheria pavilion to a child who developed measles fifteen days after admission to the hospital. On the fourth day of exposure, the day the rash appeared, each of the three children was injected with 5 c.c. of convalescent serum that had been kept in the icebox for two and one-half months. The children were protected. One of these children was subsequently exposed to another case of measles twenty-eight days after the serum injection, and following an incubation period of fourteen days he developed a typical attack of measles.

GROUP 14.—At the request of the assistant resident physician, I injected a 3 day old colored baby with 5 c.c. of convalescent serum. The mother had given birth to the baby on the day the measles rash appeared. The baby remained free from measles.

GROUPS 15 and 16.—Five children were injected, December 26, in the service of Dr. Schick at Mount Sinai Hospital. They had been exposed to a child who had developed measles two days previously. The four young children, varying in ages from 6 to 10 months, were emaciated feeding cases in which measles would have been a dangerous complication. Each child received 2.5 c.c. of convalescent serum on the sixth day of exposure. Another child, aged 2½ years, was injected two days later (eighth day of exposure) with 5 c.c. of serum. The four children injected on the sixth day of exposure were protected. The fifth child, injected on the eighth day, developed a modified mild form of measles sixteen days after exposure. Three other children between 2 and 5 years of age exposed at the same time were not injected. Two of the three children developed typical measles after the usual incubation period.

GROUP 17.—This group was seen at the Society for the Prevention of Cruelty to Children. It consisted of thirty children under 5 years of age, who were exposed for from six to eight days before receiving convalescent serum. The dose for each child was 2.5 c.c. Of the thirty children, four injected on the eighth day of exposure developed a mild, modified form of measles.

TABLE 4.—*Summary of Results with Convalescent Whole Blood, Plasma and Serum*

Days of Exposure to Measles	Total Number Injected	Number That Developed Measles	Period of Incubation Days	Type of Measles
1	5	0	.....	.....
2	5	0	.....	.....
3	8	0	.....	.....
4	26	2	42	Typical
			14	Typical
5	8	0	.....	.....
6	17	0	.....	.....
7	11	1	27	Typical
8	27	7	16-22	Modified
Total.....	102	10		7 Modified 3 Typical
Controls.....	5	4	12-15	Typical

GROUP 18.—These five children were in the diphtheria pavilion and were injected each with 3 c.c. of convalescent plasma. They had been admitted to the hospital ward on different days, and were exposed as follows: One child had one day, one had two days and the other three had four days of exposure to a measles patient (Group 13) who had been injected forty-two days previously with convalescent serum. The five children were protected.

GROUP 19.—Four children were exposed in a small ward at the Ruptured and Crippled Hospital to a child that had been admitted the day before to the hospital. The rash appeared twenty-four hours after admission. Each of the exposed children was injected with 3 c.c. of convalescent plasma. No measles developed.

GROUP 20.—Five children in the diphtheria pavilion were injected with 3 c.c. of convalescent plasma on the fourth day of exposure. One of the five children developed a fairly typical but moderate rash fourteen days after exposure and ten days after the plasma injection. The elevated temperature persisted for two days. There was some coryza, slight cough and Koplik's spots. The child made a rather rapid recovery.

GROUPS 21 and 22.—Ten children were exposed in one of the diphtheria wards to two cases of measles. The children in Group 21 received the convalescent plasma on the fourth day of exposure, and those in Group 22 on the fifth day of exposure. No measles developed.

GROUP 23.—Three children in two families received the convalescent plasma on the sixth day of exposure. The children were protected.

GROUP 24.—Three children were injected in one of the wards of the pediatric service of Bellevue Hospital. They had been exposed for six days. No measles developed.

Table 5 shows the results with convalescent plasma in two institutions in which measles had developed. It is interesting to note at the Israel Orphan Home the three individual groups of children. Each group was

separated from the others, occupied a different floor, and received a different preparation of convalescent plasma. In Group 1, a preparation was used consisting of a mixture of three plasmas obtained from the eighth to the fifteenth day of convalescence. Of twelve children injected, six developed a mild form of measles with little or no catarrhal symptoms. One child that was not injected developed typical measles. In Group 2, the plasma of a single donor, thirteen days convalescent, was used. Of twenty injected children, nine developed a mild type of measles; of six children who were not injected, two developed typical measles. In Group 3, a pooled plasma was used obtained from thirty-five convalescent donors. Of eighteen children injected, seven developed measles, three mild and four typical with characteristic catarrhal symptoms. Of seventeen children who were not injected, there were also seven who developed measles, three a mild and four a typical form.

SUMMARY OF CASES IN WHICH INJECTIONS WERE GIVEN

Of the 102 children receiving convalescent whole blood, plasma or serum, ten developed measles. Of these, seven were injected on the eighth day of exposure, and developed a modified form of measles after periods of incubation varying from sixteen to twenty-two days. One child injected on the seventh day of exposure developed typical measles twenty days later, after a period of incubation of twenty-seven days. The tenth child was protected by 5 c.c. of convalescent serum for twenty-eight days, when she was exposed to a second case of measles and developed a typical attack fourteen days later, forty-two days after receiving the serum.

Of the five control children, four developed typical measles after periods of incubation varying between twelve and fifteen days.

Of fifty-eight additional children injected in two institutions, twenty-three developed a mild and modified form of measles, and three a typical form of the disease with characteristic catarrhal symptoms. In these three children, a thirty-five day convalescent plasma was used in doses of 3 c.c. Of thirty-three control children who were not injected, three showed a mild form and ten a typical form of measles after the usual period of incubation.

TABLE 5.—*Effect of Period of Convalescence on Efficiency of Blood Plasma in the Prophylaxis of Measles*

			Children Injected								Controls*			
			Convalescent Plasma				Developed Measles				Developed Measles			
Institution	Groups of Children	Date of Injection	No. Days Convalescent	Amount Injected, C.c.	Number Children Injected	Age, Years	Period of Incubation, Days	Total	Mild	Typical	Total	Total	Mild	Typical
Israel Orphan Asylum	1st	2/17/24	Mixed 8-15	3	12	1-5	10-12	6	6	0	10	1	0	1
	2d	2/27/24	13	3	20	1-5	10-11	9	9	0	6	2	0	2
	3d	2/29/24	35	3	18	4-7	10-13	7	3	4	17	7	3	4
Total					50	..	....	22	18	4	33	10	3	7
Masters Day Nursery		2/21/24	8	3	8	2-5	17-19	8	5	0	4	3	0	3
Total in both institutions					58	..	....	30	23	4	37	13	3	10

* In some of the controls as well as in some of the injected children at the Israel Orphan Home there was a doubtful history of measles. The parents will at times give a definite history that the child has had measles when the child has really not had the disease, so as to insure its admission into an institution.

CONCLUSIONS

1. Convalescent measles serum, plasma or whole blood has definite value in the prophylaxis of measles.

2. It can be used to produce complete passive immunity if injected within the first four or five days after exposure, and a mixed form of immunity if injected in larger doses after the fifth day.

3. It can be injected in small doses after the fifth day of exposure, to modify the character of the disease rather than to prevent its development. If such an attack develops, the immunity will probably be permanent.

4. The blood plasma or serum of recovered cases, such as that from brothers and sisters and also of adults who have had measles in childhood, can replace convalescent serum if used in larger amounts.

5. With the increasing number of days of exposure, larger doses of convalescent serum have to be used when it is desired to produce complete protection. The dose of serum during the first four days of exposure is 2.5 c.c.; during the fifth and sixth day, 5 c.c., and during the seventh and eighth days, 7.5 c.c. To influence the type of measles so that a modified attack of the disease will develop, the dose is from 2.5 to 3 c.c., injected from the fifth to the tenth day after exposure. These doses are calculated for children 3 years of age; they should be proportionally higher for older children and for adults.

6. A quick, simple and convenient method, which can be used with ease both in hospital and in private practice when prepared convalescent serum or plasma is not available, is to inject intramuscularly whole blood, citrated or not citrated, in double the amounts recommended for serum.

7. Complete passive protection with convalescent serum or plasma has its field of usefulness in protecting the very young and feeble children and those suffering from rickets, tuberculosis, diphtheria and whooping cough. Also during the cold seasons of the year, when catarrhal conditions prevail and there is danger of pulmonary complications, such complete immunization is often indicated.

8. In private practice, however, in dealing with normal healthy children who have been exposed to measles, as well as in some institutions taking care of healthy robust children, it will be generally more desirable to use convalescent serum, the serum of recovered cases or adult serum, so as to obtain a modified and mild form of the disease. A fairly permanent immunity will thus be established, rather than a temporary protection for a short period of time.

9. In certain institutions, foundling asylums and hospitals the indications are to stamp out the outbreak of

measles by completely protecting the exposed and nonimmune children with convalescent serum. Outbreaks of measles cause a high mortality among these children and cripple the institutions badly. The history of previous attacks of measles should be carefully inquired into and recorded for each child admitted to an institution or hospital. Such records will greatly simplify subsequent immunization work with convalescent serum.

10. A supply of convalescent serum or plasma can be obtained and kept on hand, if coordinated efforts are made between physicians and health authorities so that donors could be directed to places, like hospitals, where the personnel would be capable of taking the blood and preparing the serum. Arrangements should be made for suitable compensation to the donors.

11. The supply of convalescent blood is bound to remain limited. The great value of recovered serum and of adult serum consists in our being able to obtain it from parents or from other relatives. This supply is constant, always on hand and easily obtainable. The dose of these serums is about two to three times as large as that of convalescent serum.

12. Careful records should be kept of the results noted in the injected children in private practice as well as in institutions, so that further data may become available for guidance in this form of immunization.

13. Of 102 nonimmune children injected after exposure to measles for varying periods of time, ninety-two were completely protected, seven developed modified measles, and two developed typical measles. Of the two, only one child was injected with convalescent plasma before the fifth day of exposure. One child was protected for twenty-eight days, but developed measles after a second exposure.

14. Of fifty-eight additional children injected in two institutions, twenty-three developed mild measles and four typical measles. These four children were injected with 3 c.c. of a thirty-five day convalescent plasma. A larger dose of this preparation or the same dose from a more recent convalescent would most probably have prevented the development of the typical form. Of thirty-seven control children who were not injected, seven developed typical measles and only three a mild form of the disease.

Approval of "Self-Rescuer" by Bureau of Mines.—The Department of the Interior has approved a "self-rescuer," designed as a means of escape from mines or other atmospheres containing carbon monoxid. It consists of a pocket size canister with mouthpiece directly attached, filled with granular fused calcium chlorid and granular hoolamite (mixture of special copper oxid and manganese dioxid) which causes carbon monoxid in air to unite with the oxygen at ordinary temperatures forming harmless carbon dioxid. Cotton filters for removing smoke are also included in the canister. The self-rescuer and a nose clip for closing the nostrils are enclosed in a hermetically sealed brass case to prevent deterioration until used. The small size permits carrying in the pocket or on the belt. Carbon monoxid self-rescuers may enable miners to escape from atmospheres containing carbon monoxid in mines following fires or explosions. They may also safeguard workers around blast furnaces and metallurgical operations, or in the chemical industries. The Bureau of Mines does not recommend using the self-rescuer as a substitute for carbon monoxid gas masks, having large canisters designed to protect persons who are called on voluntarily to meet carbon monoxid in the course of their work. The approval rather is limited to self-rescue by persons who may be accidentally caught by carbon monoxid.

CITRATED BLOOD TRANSFUSION

AN EXPERIMENTAL STUDY OF THE TOXICITY OF SODIUM CITRATE IN EXSANGUINATED DOGS *

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MINNEAPOLIS

Recently Henderson and Haggard [1] published an article concerning certain phases of hemorrhage. Their experimental work was carried out on nonanesthetized dogs which had been subjected to the removal of quantities of blood equaling 0.25 per cent. of the body weight every five minutes over a period of from one to two hours until the systolic pressure reached 28 mm. of mercury. They found that the chances of survival or death were about equal in these exsanguinated animals if they were left to themselves. They add further that:

> The arterial pressure was taken by means of a mercury manometer connected temporarily to the femoral artery. It was found important that the fluid in the cannula should be merely sodium chlorid solution. The effect of introducing inadvertently from the manometer even a small amount of sodium citrate after hemorrhage was almost immediately fatal—a point of some importance, perhaps, in relation to infusions of citrated blood. Certainly, after hemorrhage no more citrate than absolutely necessary to prevent clotting should be used. A deficiency of calcium as a sequel of hemorrhage is perhaps to be expected; and as citrate presumably acts also on this element in the blood, it would exacerbate any disturbance of the acid-alkali or other balance.

These statements of Henderson and Haggard gave us the impression that they considered citrated blood transfusion, in cases of marked exsanguination, as possibly a dangerous procedure. That this impression was gained by other readers is evident. Thus, Horsley,[2] an advocate of direct blood transfusion, expresses surprise that citrated blood should be fatal in dogs when it is so beneficial in the case of human beings suffering from exsanguination. Brines [3] cites this work as evidence against the advisability of employment of citrated blood transfusions. In an editorial in THE JOURNAL,[4] this work is again referred to in such a way as to leave no doubt in the mind of the reader that sodium citrate is a most dangerous drug in cases of exsanguination in which the administration of whole blood would result in recovery.

Instead of accepting this work of Henderson and Haggard as proof against the advisability of performing citrated blood transfusions in cases of exsanguination, as Brines and the editorial writer did, we felt, like Horsley, that further work should be carried out to clarify this problem; first, because of lack of certain important data in Henderson and Haggard's publication, and, secondly, because of the overwhelming clinical evidence in favor of the life-saving results in properly executed citrated blood transfusions in cases of exsanguination.

Henderson and Haggard do not give any information that would enable one to estimate even the approximate

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* From the laboratory of Experimental Surgery, University of Minnesota Medical School.

1. Henderson, Yandell; Haggard, H. W., et al.: Hemorrhage as a Form of Asphyxia, J. A. M. A. **78**: 697 (March 11) 1922.
2. Horsley, J. S.; Vaughan, W. T., and Dodson, A. I.: Direct Transfusion of Blood, Arch. Surg. **5**: 301 (Sept.) 1922.
3. Brines, O. A.: The Transfusing of Unmodified Blood, Arch. Surg. **7**: 306 (Sept.) 1923.
4. The Status of Blood Transfusion, editorial, J. A. M. A. **81**: 1114 (Sept. 29) 1923.

amount of sodium citrate that was introduced inadvertently into the circulation of the experimental animals. Neither the concentration of the solution nor the amount introduced is stated. How, then, can any one justly offer this work as evidence against the advisability of performing citrated blood transfusions in cases of exsanguination?

In order to investigate this question further, we made the following series of determination on dogs: (1) the effect on etherized normal dogs of intravenous injections of various quantities and concentrations of sodium citrate; (2) the effect on etherized dogs whose systolic blood pressure was reduced to about 28 mm. of mercury or less by bleeding, of replacing their withdrawn blood in the form of citrated blood, and (3) the effect of introducing intravenously into dogs, treated as those in the second series, various amounts and concentrations of sodium citrate.

Fig. 1.—Toxic effect of an overdose of sodium citrate in a dog weighing 43½ pounds (19.7 kg.); 4 c.c. of 30 per cent. solution of sodium citrate was given intravenously.

EXPERIMENTS AND RESULTS

In these experiments, all animals were anesthetized with ether. Procain and urethane proved unsatisfactory, because the dogs would not remain quiet. No morphin or atropin was administered.

In most of the experiments the mercury manometer was connected to the femoral artery; in some the carotid was thus employed. Blood was withdrawn in most instances from the same artery to which the manometer was connected. In a few animals it was withdrawn from the opposite femoral or carotid artery. In either case the final drop in blood pressure was the same, as the records show.

Permanent records of the arterial pressure and respiration were obtained in each experiment. The time recorded is in seconds.

For the various intravenous injections, the opposite femoral or jugular veins were used. The gravity method was employed for transfusing large quantities of fluid; for quantities less than 20 c.c., the syringe was employed.

Physiologic sodium chlorid solution was used as the pressure fluid for the mercury manometer.

In the first series of experiments, twelve dogs were used. Various concentrations and amounts of sodium citrate solutions were injected intravenously. The concentrations varied between 0.2 and 30 per cent., and the amounts between 0.174 and 4.25 gm. for each injection. The quantity of solution injected varied between 6 and 393 c.c., and the rate of injection from a few seconds to five minutes.

It was found that 1 gm. of sodium citrate in most instances is the smallest lethal dose for dogs weighing from 20 to 40 pounds (9 to 18 kg.) in case the injection is completed within a few seconds. The toxicity of a given amount of sodium citrate increases in proportion to its concentration and the rapidity of its injection. Some of the animals survived an injection of more than 1.5 gm. of sodium citrate, provided the injection was stopped temporarily when there was an abrupt and marked fall in blood pressure and the respiration became very shallow. At this point a very small amount of sodium citrate, if injected immediately, was quite uniformly fatal, 1 c.c. of a 10 per cent. solution proving fatal. Within from one to five minutes, the general condition of these animals usually improved sufficiently to enable them to withstand a further injection of quite a large dose of sodium citrate, equaling from 0.5 to 1 gm. This dose would cause a repetition of the alarming symptoms already referred to. Toxic symptoms manifest themselves in an initial stimulation of respiration followed by a prompt and marked depression to the point of cessation of respiratory movements in the very severe and fatal cases. Similar effects are shown in the arterial pressure, namely, an initial rise far above normal, followed by a prompt drop, sometimes approaching or reaching the zero level. In most fatal cases of poisoning with sodium citrate, the heart continues to beat for a short time after cessation of respiration. Other symptoms are generalized toxic convulsions and marked salivation. Figures 1 and 2 illustrate graphically the toxic effects of an overdose of sodium citrate on the respiration and circulation.

Twelve dogs, weighing between 26 and 46 pounds (12 and 21 kg.) were used in the second series of experiments. These animals were bled fairly rapidly until their blood pressure, which dropped promptly, reached a level of from 10 to 36 mm. of mercury, except in one instance in which the animal was transfused before the blood pressure fell below 60 mm. of mercury, owing to the alarming condition. As previously stated, the blood that was withdrawn from these animals was reintroduced into their veins as 0.2 per cent. citrated blood. In three animals there was a small variation from the 0.2 per cent. strength of sodium citrate. All of these experiments were carried out under similar conditions with the exceptions noted above.

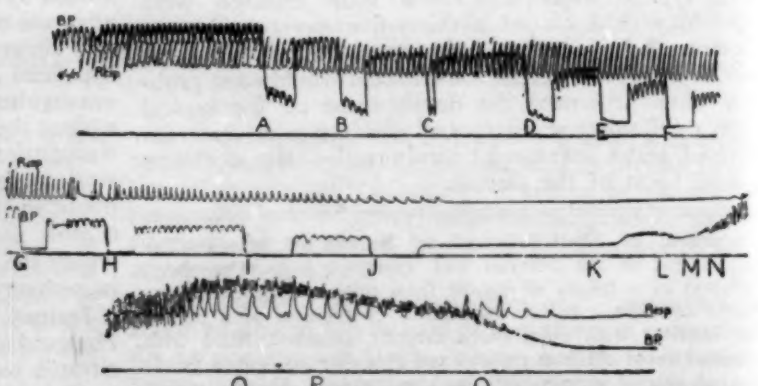

Fig. 2.—Delayed transfusion after hemorrhage and toxic effect of an overdose of citrate in a dog weighing 42½ pounds (19.3 kg.); 120 c.c. of 2 per cent. solution of sodium citrate was given: *A*, 225 c.c. of blood removed; *B*, 375 c.c. removed; *C*, 420 c.c.; *D*, 555 c.c.; *E*, 650 c.c.; *F*, 700 c.c.; *G*, 755 c.c.; *H*, 790 c.c.; *I*, 870 c.c.; *J*, 890 c.c.; *K*, beginning transfusion; *L*, 300 c.c. of blood transfused; *M*, 350 c.c. transfused; *N*, 450 c.c.; *O*, 650 c.c.; *P*, 700 c.c.; *Q*, 850 c.c.

Recovery was prompt and no toxic symptoms were observed in the animals that were transfused with less than 500 c.c. of 0.2 per cent. citrated blood, or, in other words, in the animals which received less than 1 gm. of sodium citrate. Four dogs received more than 1 gm.

of sodium citrate and recovered without manifesting any toxic symptoms. One dog died after receiving 700 c.c. of blood that contained 1.4 gm. of sodium citrate.

One dog in this series of experiments (Fig. 2) was transfused with 0.28 per cent. of citrated blood at a time when the respiration and the heart beat had stopped for sixty-seven seconds. There was prompt recovery of both circulation and respiration up to the point of administration of 650 c.c. of blood, which contained 1.82 grams of sodium citrate. Beyond this point, toxic symptoms promptly appeared, and death occurred after 850 c.c. had been given. This injection was not interrupted until the dog died.

Figure 3 is the record of Dog 12 in this series of experiments. The systolic arterial pressure was reduced to 26 mm. of mercury. This record shows graphically the prompt recovery following transfusion of 660 c.c. of citrated blood, which contained 1.32 gm. of sodium citrate.

In the third series of experiments, fourteen dogs were bled, as in the second series. Sodium citrate was then given intravenously in various amounts and concentrations to determine whether markedly exsanguinated animals are more susceptible to the toxic effects of sodium citrate than normal animals. The amounts given varied between 0.76 and 3.50 gm., and the concentration from 0.2 to 20 per cent.

In general the effects were very similar to those in the first series. No evidence of increased susceptibility to the toxic effects of an overdose of sodium citrate was noted in these exsanguinated animals.

COMMENT

It is evident from our results in these experiments that citrated blood is a very desirable transfusion medium in cases of marked exsanguination in dogs, provided the amount of sodium citrate injected along with the blood does not exceed the maximum safe dose. Since this dose is known to be less than 1 gm. of sodium citrate for an average sized dog, one need fear no disastrous results following its proper use. The implied danger of citrated blood in cases of exsanguination found in the writings of Brines and in the editorial columns of THE JOURNAL, which are founded on the experimental work of Henderson and Haggard, are disproved by our work. It may be of general interest to state in this connection that Haggard did not intend that his and Henderson's statements should be interpreted as meaning that they called in question the advisability of employing citrated blood in cases of exsanguination. Haggard, in reply to a letter of inquiry from us, writes: "I do not think there is any danger in the use of citrated blood for transfusion. In our experiments, 5 per cent. sodium citrate unmixed with blood found its way accidentally into the vessels of the exsanguinated animal. I think this is quite different from transfusion." This information, of course, probably explains why their dogs died so promptly. The presumption is that they got a fatal dose of sodium citrate, for 20 c.c. of a 5 per cent. solution introduced intravenously could certainly kill many normal dogs.

In comparing this experimental work on dogs with actual clinical cases, it should be emphasized that the commonly accepted maximum safe dose of sodium citrate for the human being is 5 gm. Therefore, if analogous conditions prevail in man as compared to the dog, relative to the toxicity of sodium citrate, one may safely transfuse an exsanguinated human being with as much citrated blood as is ever used in a transfusion and still be far under the danger point so far as the amount of sodium citrate administered is concerned, for 2,500 c.c. of 0.2 per cent. citrated blood would contain only 5 gm.

CONCLUSIONS

1. Two-tenths per cent. citrated blood is highly satisfactory as a transfusion medium in exsanguinated dogs, provided the amount of sodium citrate injected does not exceed 1 gm., which is the maximum safe dose for animals weighing between 20 and 40 pounds (9 and 18 kg.). There is a prompt and permanent rise in blood pressure and a permanent improvement in the general condition of the animals.

2. Exsanguination does not increase the susceptibility of a dog to the toxic effects of sodium citrate.

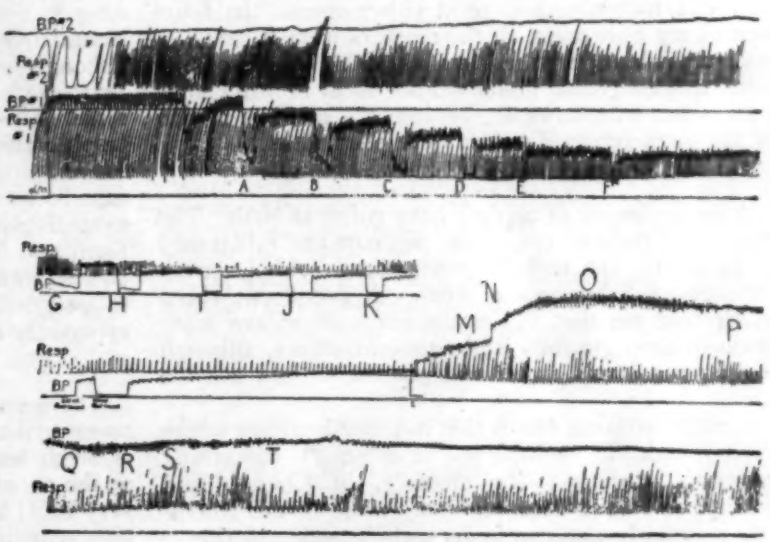

Fig. 3.—Effect of hemorrhage and recovery after citrated blood transfusion in a dog weighing 36 pounds (16.3 kg.); 400 c.c. of 0.2 per cent. citrated blood and 200 c.c. of blood plus 40 c.c. of 2 per cent. sodium citrate were given: *A*, 160 c.c. of blood removed; *B*, 250 c.c. removed; *C*, 320 c.c.; *D*, 350 c.c.; *E*, 375 c.c.; *F*, 400 c.c.; *G*, 500 c.c.; *H*, 530 c.c.; *I*, 560 c.c.; *J*, 575 c.c.; *K*, 600 c.c.; *L*, beginning of blood transfusion; *M*, 100 c.c. of blood transfused; *N*, 350 c.c.; *O*, 400 c.c.; *P*, beginning of second transfusion; *Q*, 470 c.c. of blood transfused; *R*, 545 c.c.; *S*, 595 c.c.; *T*, 620 c.c.

3. Objections to the employment of citrated blood as a transfusion medium in cases of exsanguinated human beings, based on the experimental work already quoted, are unwarranted.

The Medical Salon at Paris.—The fourth exhibition of art works by physicians was inaugurated, March 9, by the minister of public hygiene. Among the exhibitors are Drs. F. Bezançon, water colors; Hayem, medals; Colin, wood engraving; Sabouraud, with his busts of Darier and Brocq, and his group "Debout les morts"; Grégoire, with a bust, and Villandre with terra cottas. Others exhibiting works are Drs. Lortat-Jacob, Hallé, Broutelle, Papin, H. Rendu, Escat, Philibert, Engel, Bécart, Caussade, Janet, Malherbe, Peraire, Caboche, de Hérain and Delmont-Bebet. Professor Richer's well known sculpture is not represented, but there is a long list of women exhibitors, besides Dr. and Mme. Gutmann's work in choice book binding, Professor Gilbert's famous collection of coins, and Rostan's small painting "The Rejuvenation of Faust." The exhibition was due to the initiative of Dr. Rabier, and was the first to be held since the close of the war.

CONGENITAL GOITER

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Congenital goiter was first described by Fodéré in 1796, at which time he called attention to the relation between parental and congenital thyroid enlargement. Two thousand years before that, cases of adult goiter had been reported and described; but, until 1796, no mention had been made of the infant's being born with the thyroid enlargement.

In 1909, Thevenot reported 130 cases of congenital goiter, which included, in addition to his own, reports found after considerable searching through the literature.

History does not reveal anything definite in regard to the relation of parentage to infant hypertrophy of the thyroid. Demme found thirty-seven goitrous parents in fifty-three cases of congenital goiter, in twenty-three of which the mothers alone were goitrous. Out of forty-three, Richard found twenty-two mothers and only one father with thyroid enlargement. In fourteen of my own cases, all the mothers were goitrous.

Commandeur, even as late as 1908, expressed the belief that congenital goiter did not occur in primiparas. This is not true, however, because the mothers in two of my cases reported below were primiparas.

INCIDENCE

A large number of animals have goiter at birth. The progeny of the dog, cat, sheep, pig, cow and rabbit may be born with the thyroid enlargement. Also, certain varieties of fish produce them. A prominent sheep owner told me that in certain years sheep are more prone to drop goitrous lambs than in others, although feeding conditions, water and general welfare are the same.

A rather striking fact is that in many localities where goiter is endemic, we have few or no reports concerning congenital varieties; for instance, in Chicago and vicinity, few have been reported, while in the Northwest it is fairly common in general obstetric practice.

About a year ago, the scarcity of reports on this subject was called to my attention; consequently, I have kept close watch of infants born in my own practice, and since Feb. 1, 1923, I have observed twelve instances, ten of which I review here, with two others that had particularly come to my notice a few years before. As this is the report of only one man's practice, it might be considered pro rata for other obstetricians as well as for general practitioners throughout the Northwest, which makes one conclude that congenital goiter is much more common than is ordinarily believed.

ETIOLOGY

There are three main theories in connection with the development of goiter: (1) that it is infectious; (2) that it is hereditary; (3) that there is iodin deficiency. As recently as 1915, it was accepted as a fact that drinking water was the intermediary through which the infection causing goiter was carried, and it apparently was proved by the fact that in certain goitrous districts in Switzerland, affected persons cured themselves by selecting and using a new and supposedly purer water course. Now we realize that the first water was potentially iodin free and that the second water used contained the needed amount to check the growth of goiter and inhibit its development.

McCarrison[1] has been the most ardent advocate of the theory that goiter is infectious. In 1917 he published results of laborious experimentation with goats whereby he had produced congenital goiter, seemingly through infecting the mother goats with goitrous material.

Some of the well known recent works on pediatrics mention and apparently advocate the hereditary possibility; but the works of Marine and Kimball seem to prove conclusively that, though water may be the intermediary and though heredity does play a part, the real cause is the deficiency of iodin either in the food or in the water intake.

The thyroid gland at birth normally weighs about 4.85 gm., and its size, as compared with that of the infant body, is three times as great as is the ratio of the adult gland to the size of the adult body. Girl babies, according to one authority, are more frequently affected than boys.

We have recognized for many years that one of the halogens, chlorin, has been most necessary to life and in comparatively large quantities. Now we are beginning to realize that another halogen, iodin, is even as essential to physical development and mental growth, although in almost infinitesimal amounts. The normal thyroid gland contains 0.1 per cent. As soon as the store drops lower than this percentage, actual hypertrophic and hyperplastic changes in the gland begin. Marine and Kimball conclude that this store can be rapidly and markedly increased by administration of exceedingly small quantities of iodin in any known form and by any variety of means, inhalation, ingestion and cutaneous application; and by administration to pregnant mothers, the births of goitrous babies apparently are prevented.

VARIETIES

There are four forms of congenital goiter: vascular, parenchymatous, colloid and cystic. The colloid form is much less frequently seen than either the vascular or the parenchymatous. Cystic congenital thyroids are very rare; but, when present, may become so large that they sometimes even exceed the baby's head in size and cause serious dystocia in labor. The vascular class is fairly common, owing to hyperemia of the gland resulting from face presentation during labor or some malposition. This variety rapidly disappears within a few days after delivery, and is not a true goiter. This leaves the parenchymatous goiter as the most common and as presenting the largest percentage of those encountered.

SYMPTOMS

There may be no symptoms whatever arising from thyroid enlargement in the infant, and, fortunately, the majority give no signs of pathologic change except the obvious enlargement in the throat. There may be hypertrophies of any portion or portions of the gland. Distress may also be so great that death is imminent, and it may occur sometimes suddenly, owing to excessive compression of the trachea and on the vagus nerve. The most common symptoms other than the apparent size of the gland are those that one would expect from compression of the trachea, such as a dyspneic, long drawn out inspiration and expiration associated with a hissing sound. But distress may be so great that the muscles of the neck and chest are observed to enter to their full extent into this difficult inspiratory effort,

1. McCarrison, Robert: Experimental Production of Cystic Goiter, Ind. J. M. Res. 4: 183 (July) 1916-1917.

with sinking of the supraclavicular spaces and rib interspaces. This may be the only degree of difficulty; but when there is actual compression with complete closure of the trachea or interference with the action of the recurrent laryngeal nerve, the child changes from a slight to a deep cyanotic color, and inspiration is so

Fig. 1.—Thyroid enlargement in Case 10.

occluded that the child will apparently become unconscious and relax, as in Cases 7 and 11. If the infant does not die within the first twenty-four or thirty-six hours, its chances for full recovery are good. As Finkelstein has clearly pointed out, the period when most serious accidents occur is within the first few hours after birth.

REPORT OF CASES

In reporting these instances, I am merely mentioning the few salient points in connection with the mother and child and not going to any length to describe family or personal history.

CASE 1.—Mrs. G. F. H., aged 33, a quintipara, had a small, simple goiter. The infant, a girl, had enlargement on the right side of the thyroid and that portion of the gland nearest the isthmus. There was a roughened inspiratory sound as if there were pressure on the trachea.

CASE 2.—Mrs. McH., aged 26, a tertipara, had a simple goiter. The infant, a girl, was born with a small goiter. There were no symptoms.

CASE 3.—Mrs. E. J. M., aged 20, a secundipara, had a simple goiter. The infant, a boy, was born with an enlarged thyroid but with no symptoms.

CASE 4.—Mrs. W. R. O., aged 33, a quadripara, had a medium sized, simple goiter. The infant was born with a small goiter, without symptoms. The child's sister, aged 3 years, had a goiter, but it is not known whether it was congenital or not.

CASE 5.—Mrs. R. S., aged 32, a quadripara, had a simple goiter of medium size. The infant, a girl, was born with a small, simple goiter, without symptoms.

CASE 6.—Mrs. A. J. W., aged 30, a quintipara, was a very large woman possessing a marked simple goiter. A boy, born in 1917, had a simple goiter so large that he had considerable difficulty in breathing. Inspiration was plainly an effort. Birth was normal, the baby developed well, and the goiter slowly disappeared. There was a brother, about 18 years of age, who had an enlarged thyroid. This mother has given birth to two children since, neither of which had goiters, nor did she receive any treatment throughout either gestation.

CASE 7.—Mrs. J. D. S., aged 22, a quadripara, was a rather heavy woman, possessing a small, medium, simple goiter. She had one living child, and two children were dead; the cause of their death is not known. The normal delivery was at term, Nov. 8, 1922. The cord was round the neck once. The baby breathed normally at once, but great difficulty in inspiration was apparent at each attempt to cry. The trachea collapsed, and seemed to close completely. The baby, which had a fairly marked goiter, would become excessively cyanotic, stop crying and relax. So soon as it had relaxed and the crying had ceased, nearly normal breathing would resume except for a hissing sound. This was repeated whenever the child attempted to cry. It slept in comparative comfort during the day. About sixteen hours after birth it had great difficulty in breathing, and became quite distressed. A nose and throat man, Dr. I. M. Miller, found that nothing he could do was of avail. The baby died when 17 hours old. A partial necropsy revealed an enlarged thyroid gland, especially the isthmus. This had so pressed on the trachea during gestation that it was completely collapsed. The thymus was apparently normal in size, but the tracheal rings, even as low as the bifurcation, were collapsed; consequently, had resection of the thyroid isthmus been done, no relief would have been obtained. Sections of that portion of the trachea underlying the isthmus plainly showed that the cartilaginous rings had not been formed, but only islands of cartilage were to be found here and there in the tissues; consequently, the pressure of the thyroid had prevented the normal development of the cartilages, and therefore the trachea was merely a soft, collapsible tube which was incompatible with life.

CASE 8.—Mrs. C. B., aged 17, a primipara, had a rather marked, simple goiter. So did her mother. The child, a boy, had a simple parenchymatous goiter. There were no symptoms at any time.

CASE 9.—Mrs. F. L. B., aged 38, an undecipara, had quite a marked goiter. She was a large, heavy woman. The infant, a girl, born by breech presentation, presented a very marked enlargement of the thyroid. Her breathing was quite disturbed from the first. I felt that a great deal of the distress was due to congestion caused by the difficult breech delivery. However, this dyspnea became only partially relieved in from twenty-four to thirty-six hours, and continued to trouble less and less for more than a week. At the age of 8 months the goiter was still marked.

Fig. 2.—Goiter in Case 11.

CASE 10.—Mrs. S. I., a quadripara, was a rather thin, spare woman, with a cystic goiter. The birth was normal. The baby was rather cyanotic, and cried hoarsely for three or four days. Figure 1 does not bring out accurately the actual size of the gland. The baby when seen last still possessed an enlargement, but was presenting no symptoms.

CASE 11.—Mrs. J. M., aged 16, a primipara, sister to Mrs. T. D., had a medium sized, simple goiter. The child, a

boy, was fairly dyspneic at birth, and whenever he attempted to cry the trachea obviously collapsed because of the pressure of a large goiter (Fig. 2). His face and neck would become exceedingly cyanotic and he would lapse into unconsciousness, lying quietly. Then, owing to the relaxed condition and even breathing, his color would gradually return; but the crowing sound on inspiration was quite marked, even when the baby was asleep. The relatives were much alarmed the first two days whenever the baby cried, because of the repetition of the

Fig. 3.—Enlargement of each lobe and isthmus, in Case 12.

symptoms. Two weeks later the goiter had diminished some in size, and the symptoms had disappeared. A month later the goiter was still quite large, but there have been no more symptoms since the first two weeks.

CASE 12.—Mrs. T. D., aged 17, a secundipara, sister to Mrs. J. M., had a medium sized goiter. The baby, a boy, had a very marked enlargement of each lobe and the isthmus, as shown in Figure 3. There were no symptoms whatever. At the age of 2 months the child died after an illness of about thirty-six hours. The history was so confusing that the cause of death could not be ascertained positively. There is a possibility that it was due to sudden excessive pressure on the vagus and recurrent laryngeal nerves from some unknown cause.

PROGNOSIS

If the child survives the birth ordeal, the tendency is for the enlargement to diminish with fair rapidity, even without treatment. Richard, in his study of fifty cases, discovered that 60 per cent. of the patients died at, or shortly after, birth. No other author has mentioned so high a mortality; consequently, I feel that the percentage is too high. In the case of thyroid congestion due to difficult birth, the prognosis is good, especially if measures to insure breathing are resorted to. In true congenital obstructive goiter, only prompt surgical measures will save life. In Case 7, however, that would have done no good.

TREATMENT

Treatment should be prophylactic and active. In this section of the country it should be mainly the former. For ten years, Lakeside Hospital Maternity Dispensary, in Cleveland, has been giving iodin to pregnant mothers, with good results. This method should be followed painstakingly. Experience seems to indicate that congenital goiter may be eliminated entirely or to a very large extent, by this means.

If, at the time of birth, the child is markedly distressed, artificial respiration will be helpful; but if the dyspnea persists, then section of the isthmus may be done and has been performed with immediate relief. Tracheotomy should never be performed, since bronchopneumonia, hemorrhage or other complications may arise. Intubation has been used as well as the foregoing surgical measures. As was mentioned above, these goiters diminish fairly rapidly in relative size the first few days or week following birth, even when no treatment has been instituted; but a certain percentage persist into adult life. These should receive proper treatment for their reduction; the very fact of an enlargement indicates a certain lack for necessary body development, and this indication should be heeded.

SUMMARY

1. Congenital goiters are more common than it has been ordinarily supposed.
2. They are caused by iodin deficiency in the mother's diet.
3. All grades of pathologic change may be seen, from a simple parenchymatous goiter with no symptoms, to marked enlargement, with complete tracheal compression, and cystic conditions causing serious danger to mother and child.
4. Treatment is surgical for emergencies, but mainly prophylactic by means of iodin administration to the mother.

Masonic Temple.

A SURVEY OF ULCUS TROPICUM

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Tropical ulcers—tropical phagedenic ulcer, Aden ulcer, Malabar ulcer—occur in cachectic persons who have been impaired in health by privations and insanitary surroundings. Among school children who wear shoes, slippers or wooden shoes, ulcers are not common. They are common among the barefooted whose feet often get wet and soiled with mud, and especially in some forms of grass blight.

The ulcers begin to appear in May, and increase in August, September and October, when the weather is damp. They decrease in November and December, when the weather begins to get dry.

Why the ulcers exist in certain localities and not in others has never been explained. In places where shoes are extensively worn by school children, the dis-

Fig. 1.—Ulcers one week after application of arsphenamin, with decrease of discharge.

ease exists, whereas in places where every condition is favorable, the disease does not exist.

Eggerts examined 2,874 specimens, and found that 9.3 per cent. were positive for one or more types. Eggerts' Type A spirochete is described as a long, tenacious organism which typically possesses from three to four complete regular convolutions of considerable amplitude. It is 13 microns long, on an average, but varies con-

siderably from this figure in both directions. As a rule, it takes a bluish stain with Giemsa's solution.

Mendelson, in 1919, reported 100 cases, and asserted that 10 per cent. showed spirochetes, all of Eggerts' Type A. He is inclined to look on this organism, which corresponds to *Spiroschaudinnia schaudinni* Prowazek, 1917, as a superimposed infection on an ulceration. According to him, this spirochete is not

Fig. 2.—Ulcers two weeks after application of arsphenamin, with decrease in size and marked granulation tissue.

limited to a disease of distinct clinical features; in fact, it is to be found in various diseases with great varieties of clinical features.

In my study of the ulcers, some forms of spirochetes found were supposed to be the exciting causes. Of fifty-nine specimens that I have examined bacteriologically, twenty-one, or 35.5 per cent., were positive for spirochetes. Four specimens were examined twice with negative findings. Three specimens examined were negative during the second examination, which were positive in the first examination; the absence of the spirochetes in the latter case was probably due to the effect of arsphenamin given after the first examination. One specimen was positive at the second examination. In one case the ulcer, which was strongly positive for spirochetes, was considered yaws.

In almost all specimens, however, streptococci and staphylococci are encountered in considerable numbers, although these to a great extent are secondary infections.

LABORATORY METHOD

With a bistoury, a little of the base of the ulcer is incised. As soon as the blood oozes, the edges of the incision are scraped off, and the scrapings are carefully placed on the slide. The preparation is stained with ordinary carbolfuchsin diluted with ten times as much of distilled water for from five to ten seconds without heating.

The spirochetes are found slightly stained, and each spirochete is thin and delicate, bearing from three to five spirals similar to Eggerts' Type A.

GROSS PATHOLOGY

The tropical ulcer spreads over the surface and involves all the tissues, including even the bones.

An ulcer will begin from a mere scratch or from an itch. The site of predilection is the anterior and posterior portions of the legs and the dorsal part of the feet or the ankles, the anterior portion of the leg seeming to be the most common site. The upper extremities are rarely affected. Only one lower extremity is affected, as a rule, but it is not uncommon to find multiple ulcers in both lower extremities, although not more than four ulcers have been found in one person.

The ulcers vary in diameter from that of a small pea to 8 cm. Small ulcers sometimes coalesce to form lesions of enormous size.

Ulcers that have been neglected are blackish and pultaceous, and contain disintegrated materials. Some are covered by thick, hard, elevated and whitish pseudomembranes. Some varieties are elevated or deeply depressed, and in all cases the edges are undermined, smooth or ragged. The floor of several ulcers is smooth; in others, ragged. In the latter types, the ulcers are hard, with a consistency similar to that of a wart. Generally, the ulcers are round or oval, but they may exhibit all varieties of shapes.

SYMPTOMS AND DIAGNOSIS

The ulcers do not seem to give any trouble. The affected child goes about in the usual way. If the ulcer is kept clean, no pain is felt, nor does the odor of the discharge cause annoyance. The ulcers itch, however, and in many cases scratching increases their size. There is no particular feature about the diagnosis.

TREATMENT

Three methods of treatment were tried by Halpin,[2] in 1918. To treatment with a saline injection, every case responded. In the majority of cases the cure was rapid and permanent. The old, edematous tissue surrounding the edges of the ulcers disappeared rapidly, and was replaced by healthy tissue; the discharge ceased, new healthy granulation tissue soon covered the ulcers, and healing resulted. The treatment was as follows: The ulcers were thoroughly curetted and wiped off with sterile 0.6 per cent. sodium chlorid solution; then the contents of a 20 c.c. syringe filled with the solution were injected beneath the ulcer, the needle entering at the margin of the ulceration and going deep enough to prevent the solution from oozing through. The ulcer was then covered with sterile gauze

Fig. 3.—Ulcers before treatment with Vincent's powder, black and with disintegrated tissues. The largest ulcer, from which there is a discharge, is 8 cm. in diameter; the other, 7 cm. in longest diameter.

saturated with the solution. These injections were given daily as long as the ulcer persisted.

Heath found that the best results in the treatment of tropical ulcers, apart from surgical treatment, were obtained by the injections of arsphenamin, combined with potassium iodid by mouth. Externally, he uses

1. Mendelson, R. W.: Tropical Diseases Observed in Siam, J. A. M. A. **72**: 1199 (April 26) 1919.

2. Halpin, J. A.: U. S. Nav. M. Bull. **12**: 80 (Jan.) 1918.

moist dressings consisting of lint soaked in compound solution of cresol, 0.5 per cent., and covered with a piece of the young leaf of the banana; this makes an excellent protective covering, costs nothing, and is easily obtained. When the ulcer is clean and granulating, a dusting powder is used. Arsphenamin can be injected intramuscularly at the dispensaries or at the patient's home without any special apparatus and with practically no risk, though patients do better in a hospital. Of course, there is a certain amount of pain. Besides the marvelous quickness with which the ulcer heals, a striking feature is the apparent improvement in the general health and appearance of the patient.

Surgically, Howard's [3] method consists in scraping away all the sloughs and softened tissue with a Volkmann spoon. When a firm base of sound tissue has been obtained, the necrosed edge of skin is cut away with scissors curved on the flat so as to leave no pockets. Any ragged piece of fibrous tissue that remains in the base of the ulcer is then cut away with scissors. The surface is washed over with an antiseptic, and then dressed with cyanid gauze and some antiseptic wool, and firmly bandaged. The first dressing is done forty-eight hours after the operation.

Fig. 4.—Healed and improved ulcers after twenty-eight days' treatment with Vincent's powder.

We have treated a total of 598 cases of ulcers, 175 of which were in females. A total of 410 patients were cured, 107 of which were females; 188 were not cured. A greater number of cured cases occurred during the first four weeks; these were of the small, nonresistant types. Likewise, many were cured during the ninth, tenth and eleventh weeks; these were of the large and very resistant types described as being covered with thick, ragged and hard pseudomembranes. These types were from 6 to 8 cm. in diameter.

We have used a 3 per cent. solution of arsphenamin. A piece of cotton was wet with the solution and carefully placed over the ulcer and allowed to remain until the next day. When the ulcers showed healthy granulation, they were then washed with compound solution of cresol and dusted with boric acid until they were cured. This was the most effective treatment used, because the granulation began to show up during the first or second day of treatment. The discharge also diminished wonderfully in one or two days, and the efficiency of arsphenamin would perhaps account for this immediate effect.

Vincent's powder, composed of one part of sodium hypochlorite and nine parts of boric acid, was the most effective drug used. The ulcer was washed with 1:4,000 solution of potassium permanganate and dusted with Vincent's powder. The discharge decreased, and the granulation began to appear from the fourth to the sixth day. The ulcer was then washed with physiologic sodium chlorid solution, and ointment of zinc oxid was applied until the ulcer healed.

The method of washing the ulcer with 1:4,000 potassium permanganate solution and then applying mercurial ointment seems to be rather a weak treatment.

The affected child should not be allowed to come in contact with other children. In the schoolroom he should be separated from the rest of the class, but not excluded. Clean homes and sanitary surroundings, clean clothing, frequent bathing and fresh air are among the important factors in the hygienic treatment. The constant wearing of shoes will prevent the accumulation of dirt about the naked feet and legs. Carefully selected nourishment is a prime necessity to build up a strong constitution. In cachectic persons, a tonic should be administered. In those suffering from hookworm disease, an attempt should be made to give thymol with the ulcer treatment.

CONCLUSIONS

1. Tropical ulcer is believed to be caused by some forms of spirochetes of Eggerts' Types A.
2. The disease is contagious, being usually found among school children who are in constant contact with one another.
3. The most effective treatment is arsphenamin (3 per cent. solution) applied locally, and the next is Vincent's powder.

3. Howard, R.: Surgical Treatment of Ulcus Tropicum, J. Trop. Med. & Hyg. **33**: 215 (Sept. 1) 1920.

Clinical Notes, Suggestions, and New Instruments

APPARATUS FOR THE DETERMINATION OF THE SALIVARY UREA INDEX *

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The development and clinical application of the salivary urea index has been previously described in detail.[1] No special apparatus is needed for the determination of the index in laboratory or hospital practice. Flasks and a buret will suffice. For the convenience of the general practitioner, however, it has seemed wise to assemble the necessary reagent bottles, collecting flask and calibrated index tubes in a small box, which may be carried in a handbag or may serve as a compact laboratory outfit.[2]

PRINCIPLES OF THE METHOD

With urea retention in the body, there is an increase in the salivary urea, proportionate to the rise in the blood urea.[3]

* From the Division of Medicine, Mayo Clinic and Mayo Foundation.

1. Hench, P. S.: Salivary Urea and the Mercury Combining Power of Saliva: A New and Simple Index of Renal Insufficiency, M. Clin. N. Am. **7**: 123-134 (July) 1923. Hench, P. S., and Aldrich, Martha: A Salivary Index to Renal Function, J. A. M. A. **81**: 1997-2003 (Dec. 15) 1923. Note: Through error, Chart 2 in this article was labeled Chart 3, and vice versa.

2. This apparatus was devised with the cooperation of Hynson, Westcott and Dunning of Baltimore, from whom it may be obtained.

3. Hench, P. S., and Aldrich, Martha: The Concentration of Urea in Saliva, J. A. M. A. **79**: 1409-1412 (Oct. 21) 1922.

Certain salivary constituents have the property of forming compounds with mercury, and of these, the salivary urea is the dominating mercury-combining element. Therefore, urea retention in the body is indicated by a rise in the mercury-combining power of saliva. The mercury-combining power of 100 c.c. of saliva, measured in cubic centimeters of 5 per cent. mercuric chlorid, is called the salivary urea index.

Fig. 1.—Case containing instrument for the determination of the salivary urea index.

METHOD

End-Point.—When mercuric chlorid is added to saturated sodium carbonate, a reddish brown precipitate of a mercury oxychlorid is formed. If the mercuric chlorid is first added to saliva, and then a drop of the saliva-mercuric chlorid mixture added to saturated sodium carbonate solution, no reddish brown precipitate will ocur until free mercury is present; that is, until the mercury-combining power of the saliva is entirely satisfied.

Collection of Saliva.—After the mouth has been thoroughly washed with half a glass of water, a small piece of paraffin is chewed to stimulate salivary flow. Paraffin of a low melting point is desirable as it does not crumble readily, or a wad of paper may suffice; but chewing gum interferes with the end-point and should not be used. First, the vial marked $\frac{SP}{A}$ is filled approximately to the line; then the vial marked $\frac{SP}{B}$ is filled. Specimen A is used only as an approximate check, as it may contain food particles, rinse water, and so forth, which may alter its mercury-combining power. Specimen B is used for the determination of the salivary urea index.

The determination on Specimen B should be made promptly, or, at the latest, two or three hours after its collection, to forestall bacterial action, which would cause a rise in the mercury-combining power. If the specimen cannot be tested promptly, bringing it to a boil for only a few seconds will prevent the bacterial decomposition.

Titration.—With the black-tipped dropper, one drop of saturated sodium carbonate is placed in each depression of the porcelain plate. Saliva from Specimen B is carefully measured with the large pipet into the calibrated index tube up to the line marked 5 c.c. Then with the red-tipped dropper, the 5 per cent. mercuric chlorid solution is added until the mark 30 in the index tube is reached. With the cork inserted, the tube is inverted six or eight times, thus thoroughly mixing the saliva and the mercuric chlorid. The small glass tube is inserted into the mixture, and the liquid allowed to rise in it. From this tube, one drop is added to a drop of sodium carbonate on the porcelain plate, and the remainder of the contents of the tube is blown back into the index tube. If a brownish-red tinge promptly appears on the porcelain plate, the end-point has been reached; but if no color, or a canary yellow appears, the titration must be carried further. In this case about 6 drops of mercuric chlorid should be added, mixed and tested again with sodium carbonate; one continues thus, and adds mercuric chlorid to the index tube until the test drop shows the first definite trace of brownish precipitate, developing in about three seconds. The salivary index is then read directly from the index tube. If more than 3 or 4 drops is removed, correction should be made by adding a value of 2 to the salivary index for each 3 or 4 test drops used.

With saliva from patients with very high urea retention, determination of the end-point is a little difficult, as a brown precipitate tends to appear slowly before the real end-point. The latter, however, may be determined when a definite brown precipitate appears promptly within three seconds.

CLINICAL INTERPRETATION

The normal salivary urea index is between 30 and 50 c.c. of 5 per cent. mercuric chlorid for each 100 c.c. of saliva. When urea retention occurs in the body, the salivary urea index rises in proportion to the retention. The significance of the salivary urea index in retention should be understood per se, but for the sake of the clinical interpretation of the salivary urea index in familiar terms, the probable association between the salivary index and the blood urea is given by the formula: probable blood urea = 1.43 × salivary index — 34. This formula was developed by a correlation of the two values in about 900 cases. For example, if the salivary urea index equals 100 c.c., the probable blood urea equals 1.43 × 100 — 34, or 109 mg. for each 100 c.c. of blood.

Probable Equivalents

Salivary Urea Index		Blood Urea, Mg. Per Cent.
30 to 40 50	Normal values	10 to 24 40
60		53
70		67
80		81
90		95
100		109
110		124
120		138
130		152
140		166
150		180
160		195
170		209
180		223
190		237
200		250
210		265
220		279
230		294
240		307

Fig. 2.—Apparatus used to determine the salivary urea index.

Expert Assistance for Health Work.—The several divisions or bureaus of the state board of health should be equipped to provide the local health departments with the expert assistance that is needed to enable them to establish and maintain the various special lines of work as it becomes necessary and desirable to take them up.—W. S. Draper: *Public Health Rep.* **38**:2718 (Nov. 16) 1923.

A NEW PIPET CLEANER*

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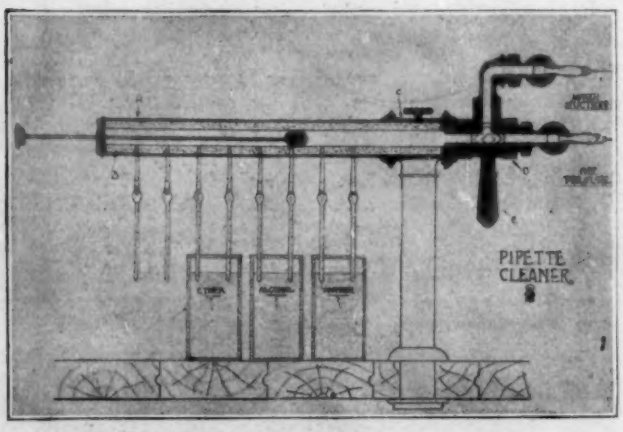
The necessity of cleaning dozens of pipets daily is one of the problems of the central laboratory scheme.

Suction alone is variable, and at best is often not of sufficient force. The combination of pressure and suction



New pipet cleaner.

seemed logical, but difficulty was encountered in holding the pipets while pressure was applied. This was finally overcome by drawing a half inch pressure tube with walls three-eighths inch in thickness (*B*) within a nickeled brass pipe (*A*) into which eight one-fourth inch holes have been bored at one inch intervals. Now the tubing was perforated with a one-eighth inch cork borer corresponding to the holes in the brass pipe. The pipet inserted into these holes is held firmly and clasped more tightly when pressure is turned on.

Within the rubber tube a brass plunger valve is fitted, allowing from one to eight pipets to be cleaned at a time. Into the opposite end a three way brass valve (*D*) is fitted and connected to a water suction pump and an air pressure line, respectively. The handle (*E*) operating this valve is also used to rotate the holder dipping the pipets into the solutions. The whole is supported by a single upright, and revolves in a T connection which has a set screw to regulate the friction.

This convenient, durable and time-saving apparatus can be readily constructed in any shop.

MONGOLISM IN SUCCESSIVE MEMBERS OF THE SAME FAMILY

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The two cases described in this paper were referred for difficulty in breathing and nasal obstruction. Though they do not come within the province of the laryngologist, the rarity of mongolism in two members of the same family warrants their report.

REPORT OF CASES

Robert P. and Edward P., aged, respectively, 11 and 8 years at the time of the examination, July 27, 1923, could not talk, did not seem to understand the questions put to them, and were very destructive. The inability to talk and the fact that they kept their mouths continually open induced the parents to believe that there was some nasal or vocal obstruction.

The father was 45, born in Italy, a citizen, and of normal mental and physical make-up. The mother was 45, and born in Italy. She showed no abnormality. The parents had been in the United States twenty-five years. The paternal grandfather and grandmother were about 70 years of age, both living and well. The maternal grandmother died at the age of 60, cause unknown. The maternal grandfather died at the age of 24 of pneumonia. There were eleven children in the family ranging from 29 to 8 years of age. The patients were the last two of the siblings. All the other children were of normal mentality and good physical condition. There was no history of any nervous, mental or organic disease in the family.

The developmental history showed that there had been no mental or physical disturbance during the period of gestation with either child. There was no instrumentation, anesthesia or asphyxiation. The deliveries were normal, with only a midwife in attendance. Both children cut their first tooth late, at about 2 years of age. Robert began to walk at 2 years, and Edward at 15 months.

The only previous illness was measles, which Robert contracted at 4 years and Edward at 2 years. The tonsils and adenoids of Robert were removed when he was 7 years of age.

In habits, the children somewhat differed. Robert had a good appetite and slept fairly well, but at times was restless. He was clean about his person. Edward, in addition, was very fidgety, touching everything and running around wild in the room, regardless of reprimands. Neither of them could undress or dress himself.

The psychologic test revealed that they were below all psychometric measurements, that is, even below 3 years of age. Mentally, they were to be classed in the low grade imbecile group of intellectual deficiency.

Physically, they appeared almost like the Siamese twins in resemblance except for the difference in size and weight,

Appearance of the two patients.

which in each case was in proportion to the age. They were fairly well developed and well nourished. The musculature was firm and good. The skin was smooth, warm, moist and elastic. The adipose tissue was well distributed and normal in amount. The tongues were thick and fissured, and tended to protrude from the mouths. The teeth were carious. Robert's teeth showed wide interdental spaces. The eyes were slanting, almond shaped and typically Mongolian. The small

* From the laboratories of the Henry Ford Hospital.

fingers of each hand were short and incurved. A slight conjunctivitis was present. The pupils reacted to light and in accommodation, and were equal in size and regular in outline. The extra-ocular movements were negative. The cranial nerves were intact. The heart sounds were clear and distinct, and no murmurs were heard. The lungs were clear. The abdominal viscera appeared to be negative. The superficial and deep reflexes were intact. The station and gait were good, but there was a marked hypotonia present.

231 East Eleventh Street.

A CASE OF ELEPHANTIASIS FROM THE BELGIAN CONGO

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CONCORD, N. C.

Any medical man who has the privilege of following his profession in central Africa is rewarded for his arduous life not alone by the satisfaction that he is serving where there is an appalling need, but by coming in close touch with interesting diseases of the most varied types. One group of diseases, as one may well call it, that is continually presenting itself at all clinics in a variety of forms is that of the conditions resulting from the infection by *Filaria bancrofti*. These conditions seem to be more frequent in the male and to group themselves oftenest about the generative organs, manifesting themselves as simple scrotal elephantiasis, or such further complications as hydrocele, lymphangitis, chyluria, lymph scrotum, varicose lymph glands and orchitis.

It is the common experience that the newer medical man does not see many severe cases. Patients do not show themselves, partly owing to fear or to the influence of relatives or witch doctors. Only after one has gained the confidence of the native, and has done a certain number of successful operations, does one see the difficult cases. The medical missionary, as a rule, has far more opportunity to see and study interesting cases than government or company physicians, who are held in more or less fear, and whose work is restricted to native employees or those near by. The medical missionary often draws patients from a distance. The patient whose case is described here came from a village about 10 miles away. He was a well built specimen of the big Baluba tribe, 6 feet tall, well nourished, and apparently not sick at all. He walked slowly and with great effort, his whole body swaying with every step. Between his thighs and legs, which were widespread, under his loin cloth was an unusually large, simple, scrotal elephantiasis. The patient stated that he was anxious to have the operation done at once, because it was a great shame to him; he was an outcast, and never could get married and have children (this is a disgrace, and a sign of possession by evil spirits). The tumor had been present about six years. This means that he had had it longer, as the natives pay little attention to them when they are small. He suffered no ill effects except from the weight and from being the laughing stock of the tribe, and he had come to the mission amid the doubts of his chief and people, who tried to undermine his faith in the white "Nganga Buka" (witch doctor).

Fig. 1.—General view of patient, showing marked hypertrophy of thighs, and spread legs.

On closer examination, one of the first striking features was the marked muscular development of the hip and thigh regions, resulting from carrying and balancing this pendulous mass. The neck of the tumor was about 20 inches in circumference, and protruded in the back as well as in the front. The anus was drawn downward several inches by traction. The sheath of the penis was involved in the scrotal mass, the prepuce being dragged down and inverted, forming a channel 6 inches long leading to the glans penis, and opening on the lower third of the anterior face of the tumor as a long, horizontal depression with an arch above. Two fingers could be barely admitted, and a probe easily passed. The testes could not be palpated, owing to tremendous edema, hypertrophied skin, and apparent depth of situation. In the more dependent parts of the mass the skin was very thick, hard, tough and thrown into heavy folds, with irregularities that at times amounted to warty tumors, resembling truly the skin of an elephant. The whole tumor was rather well nourished, and only where one area had been burned by a fire in the patient's grass hut was there some ulceration and infection. When the patient lay on his back or sat down so that the tumor could become relaxed, there could easily be observed constant, peculiar, wavelike, peristaltic movements running through it.

Fig. 2.—Near view of tumor (taken with photographic attachment lens), showing roughness of skin.

The patient was free from other tropical diseases of any importance (which is unusual in this locality). Blood study did not reveal the presence of *Microfilaria bancrofti;* nor was this to be expected, as it is well known that when evidences of elephantiasis are present, the microfilariae have disappeared from the blood, as it is the death of the adult in the lymphatic system that is the exciting factor of recurrent lymphangitis, which may finally result in blockage of the particular region involved.

In preparing for operation, an attempt was made to carry out the advice of authorities[1] to drain the tumor to a certain extent in order to reduce loss of blood, lymph, and danger of hemorrhage. The patient's head was lowered somewhat below the level of the body, but after three hours it was necessary to discontinue this method, because the more liquid parts literally flowed through the neck of the tumor and up the front part of the abdominal wall, causing a tremendous edema of the skin and great enlargement of the neck of the sac itself, tending to distort all anatomic landmarks. When the patient stood on his feet, the tumor returned to its original shape. This rapid change was probably due to the attempt to drain the tumor too rapidly.

Ether was administered by a native boy. The inner tube of a bicycle served as a tourniquet about the neck of the tumor. This anesthetist and the two other native assistants were about 15 years old, and had had six months' training.

1. Manson: Tropical Diseases, Ed. 7, 1921, pp. 621-626. Keen's Surgery **2**: 595-602.

Also, assistance was given by the wife of another missionary. Such circumstances make operative work much more tedious and difficult, it being impossible to schedule many operations at one time.

By the routine T-shaped incision, the channel leading to the head of the penis was laid open, the penis freed, gradually elevated and separated from the underlying mass, and the horizontal incisions extended around to each side and backward. The penis itself was not involved, but all except half an inch of the skin adjoining the glans was unusable. On incision, the skin was found very thick and tough, with dense, yellowish white fibrinous tissue in great excess. With each incision there was a marked effusion of clear, straw-colored, lymphlike fluid, which, together with some bleeding, tended to fill the wound constantly. The blood supply was excessive, with greatly enlarged vessels, and at times bleeding was hard to control. Throughout the tumor, but especially in the upper part, were numerous strong, supporting fibrous bands and tendon-like structures, dividing the mass into many compartments filled with soft, blubbery, yellow-white tissue. In two such compartments to the rear and pulled down into the lower part of the tumor mass were the testes, completely buried in masses of areolar tissue; they were about normal in size and appearance. No hydrocele was present. The testes, with the much lengthened spermatic cords, were freed by hand dissection, and were elevated over the pubes with the penis. There was no inguinal hernia present, as is often the case. After tedious clamping, cutting and ligating, the mass was finally freed, and found to weigh 85 pounds (38.6 kg.). The small ring of usable skin about the head of the penis was united to the normal skin of the pubic area, and enough normal skin left below to form an ample new scrotum. The wound was closed with silkgut and drained. During and immediately after the operation the patient received in all 600 c.c. of physiologic sodium chlorid solution intravenously. At no time did he show any alarming symptoms of shock, a strong testimony to the fitness of the African native for operations. The operation required more than three hours. After four days there was some fever and a slight infection, which cleared up later. Ten days after operation the patient was in very good condition, the penis and scrotum coming down to normal. There is reason to believe that this man will be able to marry and have a family.

Fig. 3.—Patient seated, ten days after operation, showing head of penis, new skin cover, and new scrotal bag.

TWO RARE CASES OF DISLOCATED PATELLA

C. M. SCOTT, M.D., BLUEFIELD, W. VA.

These two cases occurred within thirty days. Both were injuries to boys, aged 15 years. The literature at my disposal does not cite a similar case, and the surgical aspects were almost identical in the two cases.

CASE 1.—J. L. jumped on a freight train in motion, to steal a ride. With one foot in the stirrup, and the other hanging down, his knee struck against a switch light. This knocked him off, throwing him 10 or 12 feet, when the same knee struck against the end of a railroad tie. Roentgen-ray examination (Fig. 1) revealed a dislocated patella, the superior margin being driven horizontally backward and into the joint, acting as a wedge between the femur and the tibia. The quadriceps extensor tendon was probably ruptured on the first impact, the prepatellar tendon remaining intact, while the second compact with the tie drove the patella into the joint. Reduction under the circumstances was impossible, except by open operative methods. The patient was taken to the hospital four days after the injury, and a tremendous amount of effusion into the joint was present. It became necessary to perform aspiration several times before operative repair could be attempted.

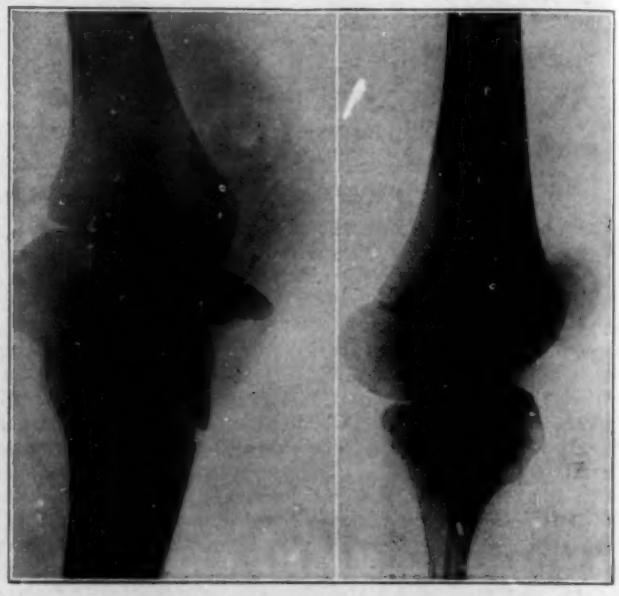


Fig. 1.—Condition and result in Case 1.

The surgical technic decided on was the incision such as is used for excision of the knee joint. The initial incision was made below the patella; the ligament was cut through, and the incision was extended into the joint capsule proper. The superior border of the patella was found driven into the joint, resting against the anterior crucial ligament, almost exactly as illustrated by the roentgenogram; but the patellar bursa was found ruptured, and the capsular tissue was also ruptured and torn from the patella, permitting the bone to be exposed. As this tissue is analogous to the periosteum on long bones, repair was indicated. The ligamentous coating was approximated and sutured with catgue, which restored to the posterior surface of the patella a non-scar-producing surface, thereby eliminating the possibility of new bone growth or exostosis. The tendons were repaired by the regular

Fig. 2.—Condition and result in Case 2.

tenotomy technic, the capsule was closed, and the joint also was closed, with no drainage.

Recovery was uneventful. The patient was discharged from the hospital thirty days later, with good functional results.

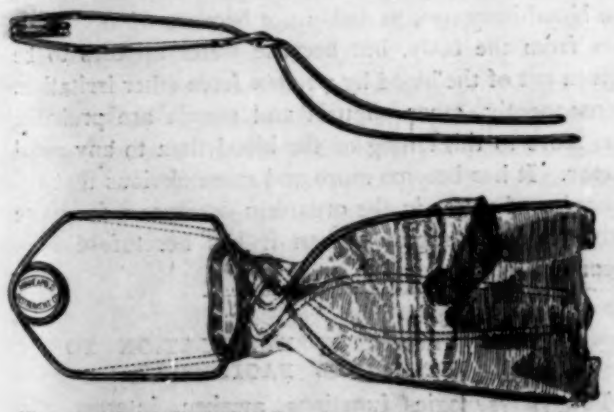
CASE 2.—F. K. was thrown from a playground merry-go-round, one of the kind that rise and fall mechanically during the circular course. It consists of a plank resting on a center support, held on this base by an iron pin, the momentum being obtained by the boys running in a circle. The boy on the opposite end, in this case, jumped off, permiting the patient to fall to the ground. In his fall he struck his knee against the ground, and before coming to a full stop, he again struck the same knee, thus doubling the trauma. The roentgen-ray findings (Fig. 2) almost parallel those in the preceding case. The same rupture of the quadriceps extensor tendon and dislocation of the patella was present, and the patella was driven into the joint. The patient was admitted to the hospital ten hours after the accident, and immediate operation was decided on. The operation was almost identical with the first one, consisting of an arthrotomy, the incision being made below the knee, and the patellar ligament being cut through. Reduction was made, reconstruction of the tendons was made, and the incision was closed with no drainage. The patient was discharged thirty days later, with the good functional results seen in Figure 2. The roentgenograms were made by Dr. W. W. Morton.

St. Luke's Hospital.

A VISCERA RETAINER

ROBERT EMMETT FARR, M.D., MINNEAPOLIS

A large number of devices have been designed for preventing the evisceration of the abdominal contents while closing the peritoneum after the performance of an abdominal section. Such an instrument should present a flat, broad, smooth surface in order to control the omentum and small intestines and, in order to meet the ideals demanded, should remain in situ until the peritoneal incision is so nearly closed that its use is no longer necessary. It is well known that a smooth surface of sheet rubber offers the least amount of trauma to the sensitive peritoneal coating of the viscera of any substance known.



Viscera retainer; the broken line shows the instrument partially collapsed in the sleeve of a rubber glove.

The viscera retainer here presented is a modification of the instrument shown in a recently published monograph.[1] The instrument is slipped into the cuff of a dry, sterile rubber glove, the fingers of which have been allowed to remain inside as the glove is reversed. A glove of small or large size may be used as occasion requires.

The stretched glove may now be used for the purpose of retaining the bulging viscera, which it will be found to do most effectually, while the peritoneum is almost completely closed. Pressure on the handles makes the two intraperitoneal small prongs approximate each other, and the retainer may be withdrawn, after which the collapsed glove, now moistened from the peritoneal secretions, is extracted and the closure completed. The use of this instrument allows the surgeon to close the peritoneal incision to a point one inch short of completion.

1645 Hennepin Avenue.

1. Farr, R. E.: Practical Local Anesthesia, Philadelphia, Lea and Febiger, 1923.

A SIMPLE SUBSTITUTE FOR THE ORDINARY SAND-BAG IN GALLBLADDER SURGERY

HERBERT H. JUDD, M.D., BOZEMAN, MONT.

I have observed that many of the patients requiring surgical work on the gallbladder are very heavy, and that the placing of the sand-bag under the back after anesthesia is complete is not an easy matter. Also, the ordinary sand-bag is very uncomfortable to the patient, and many complain of strain following the operation. I worked out a scheme with the local automobile tire repair dealer whereby he cut a section from an old truck tube about 24 inches long and sealed and vulcanized both ends, placing an ordinary tire valve in one end. This cushion is placed under the patient without inflation before the anesthetic is started, and when anesthesia is complete the nurse or anesthetist inflates the cushion by the means of an ordinary automobile pump until the surgeon is satisfied with the position.

The variations as to size and number of cushions seem to be innumerable, and the expense is nil.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SAGROTAN.—A liquid composed of chlorcresol 8 per cent., chlorxylenol 4 per cent., soap 22 per cent., alcohol 9 per cent. and water 57 per cent.

Actions and Uses.—Sagrotan is an antiseptic and germicide. The germicidal efficiency of sagrotan is stated to be 2.5 times as great as that of an equal quantity of phenol. While the germicidal efficiency of sagrotan is almost equal to that of compound solution of cresol U. S. P., it has the advantage over this preparation in that it is almost odorless; also, it is claimed to be less toxic.

Dosage.—For use as an irrigant, application to wounds and similar purposes, a dilution of 1:50 (5 fluidrachms to one quart of water) is used. For the disinfection of excreta dilutions of 1:100 to 1:20 (2.5 to 12 fluidrachms per quart of water) are used.

Manufactured by Lehn and Fink, Inc., New York. No U. S. patent. U. S. trademark 93038.

Sagrotan is a reddish brown liquid, having a faintly aromatic odor and a strong, phenolic taste. Its specific gravity is approximately 1.03 at 25 C. Sagrotan is decomposed by admixture with acids or salts.

Transfer 4 to 5 Gm. of sagrotan, accurately weighed, to a beaker, dilute with water 100 Cc., add a solution of crystallized barium hydroxide 3 Gm. in water 75 Cc. A precipitate of barium chlorxylenol and barium soap is formed, while the solution contains the soluble barium compound of chlorcresol. Heat the mixture to about 100 C. for ten minutes stirring constantly with a glass rod. Cool the liquid and transfer it to a filter, collect the filtrate and wash the precipitate with distilled water. Acidify the filtrate and washings with strong hydrochloric acid and extract with three portions of ether, 50 Cc. each. Treat the united ether extract with dried sodium sulphate and filter into a tared dish. Allow the ether to evaporate, dry the dish and contents over sulphuric acid and weigh. The weight corresponds to 8 per cent. of chlorcresol.

PROCAINE-ABBOTT (See New and Nonofficial Remedies, 1923, page 39).

The following dosage form has been accepted:

Procaine-Epinephrine Ampules 1 Cc.—Procaine-Abbott 0.02 Gm. (⅓ grain), epinephrine 0.00004 Gm. ($\frac{1}{1000}$ grain) in Ringer solution 1 Cc.

Pulmonary Circulation Described in 1553.—The earliest printed description of the circulation is that of the pulmonary circulation in Servetus' "Christianismi Restitutio," printed at Vienna in 1553.—MacKall, L. L.: *Proc. Roy. Soc. Med.* **17**:35 (March) 1924.

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SATURDAY, APRIL 12, 1924

HEAT REGULATION AND WATER EXCHANGE

Upsets in the heat-regulating devices of the body are among the disturbances of which the physician is compelled most frequently to take cognizance. They are usually distressing to the patient, and frequently disconcerting to the practitioner. Although the use of antipyretics to combat fever has been placed on a far more rational basis than that on which it rested fifty years ago, it cannot be regarded as much more than a sort of scientific empiricism, even today. In discussing the significance of fever, before the Harvey Society, a few years ago, MacCallum [1] remarked that the term is one so honored by age and by the good that must consequently inhere in it that it cannot be discarded or dismembered. It is difficult, nevertheless, to define this conception clearly, because even yet we are unable to say with certainty at what point the direct effects of the cause of the disease end and what really belongs to the fever; for although the elevation of the body temperature is one of the most salient points, it is by no means the only characteristic, nor is it itself always to be regarded as an infallible sign of fever, for such elevation of temperature may occur in a perfectly healthy person, if, for example, he is immersed in a hot bath.

Knowledge of the normal heat-regulating mechanism of the body is fundamental to any adequate understanding of the phenomena of fever. The outstanding feature of it in man is the effectiveness of the regulatory devices in securing an approximately constant body temperature. The diurnal variation in health rarely exceeds 1 degree C. despite the extremes of external heat or cold or the irregularities in his metabolism to which man may be subjected in the course of the day. Water is the central factor in the regulation of bodily heat. As Barbour [2] has summarized the importance of this conception, equalization of temperature in living organisms is best attained through the presence of a mobile constituent that can circulate freely and rapidly. Water, above all other liquids, is fitted for temperature equalization and regulation; for, as Lawrence Henderson points out, it ranks very high as regards three qualities—specific heat, heat of evaporation, and conductivity. The first favors storage of heat; the second permits rapid elimination when necessary, as when environmental temperature exceeds that of the body; the third allows rapid equalization of heat within the fixed tissues of the body, minimizing the possibility of injury from local overheating within or without.

It is the outstanding merit of Barbour to have demonstrated some of the ways in which water may be mobilized, so to speak, for the tasks of temperature adjustments. His researches [3] indicate that blood dilution occurs in response to external heat, whereas cold leads to a concentration of the circulating medium. Obviously, the distribution of a larger amount of water in the blood stream renders it more readily available for evaporation. Antipyretics appear to function in fever by causing the blood to become more dilute than under normal conditions. Under the stimulus of a warm environment, water is not only brought to but poured freely over the surface of the outspread body; whereas, amid cold, the water reserve is withdrawn from the surface to the better insulated parts. Evidently, as Barbour says, anhydremia promotes sparing of heat. One hypothesis in respect to the symptom of fever in ordinary febrile diseases assumes a deficit of free water resulting from an abnormal tendency on the part of the colloids of the body to bind water. The latest studies give indication that the normal exchange of water in response to changes in environmental temperature is interfered with by anesthesia. The concentration of the blood increases, probably not because of any water loss from the body, but because water appears to be driven out of the blood by a reflex from ether irritation. Consequently, ether oliguria and anuria are probably due more to thickening of the blood than to any renal factor. It has become more and more obvious that the behavior of water in the organism deserves a far more exhaustive investigation than it has heretofore been accorded.

1. MacCallum, W. G.: Fever, the Harvey Lectures, 1908-1909, p. 27.
2. Barbour, H. G.: The Heat-Regulating Mechanism of the Body, Physiol. Rev. **1**: 295 (April) 1921.
3. Barbour, H. G.: Heat Regulation and Water Exchange, I, The Effects of Hot and Cold Baths upon Blood Concentration and Brain Volume in Dogs, Am. J. Physiol. **67**: 366 (Jan.) 1924. Barbour, H. G., and Tolstoi, E.: Heat Regulation and Water Exchange, II, The Rôle of the Water Content of the Blood, and Its Control by the Central Nervous System, ibid. **67**: 378 (Jan.) 1924. Lozinsky, E.: Heat Regulation and Water Exchange, III, The Effects of "Dry" and "Moist" Heat upon the Body Temperature and Blood Concentration of Dogs, ibid. **67**: 388 (Jan.) 1924. Barbour, H. G., and Bourne, W.: Heat Regulation and Water Exchange, IV, The Influence of Ether in Dogs, ibid. **67**: 399 (Jan.) 1924.

GASTRIC SECRETION IN RELATION TO INTESTINAL FACTORS

Few physiologic functions awaken interest and encourage study on the part of clinicians more readily than do the phenomena pertaining to the stomach. The field of gastric pathology in medicine is a large one, and no appreciation of its meaning can be complete without adequate knowledge of gastric physiology. In the closing decades of the last century it was the diges-

tive phase of the stomach's activity that attracted foremost consideration. Discussion centered in enzymes, and proteolytic changes in the foods ingested. Pawlow's classic studies on secretion helped to divert a large share of interest to the production of gastric juice and the influences that modify it. Today, Carlson ventures the warning that the rôle of the gastric juice in the maintenance of health and in the etiology of disease has been exaggerated, to the neglect of the importance of normal gastric motility. Thus do views change from one generation to another.

Nearly fifty years have elapsed since the French physiologist Richet, in 1878, observed that gastric secretion occurs in man as a consequence of tasting various foods. The phenomenon with which he was dealing was the now well known "appetite secretion" of gastric juice. Seeing, smelling and tasting food induce gastric secretion, provided the state of hunger and appetite is present. It is therefore a conditioned reflex. Tasting the food appears to be the most potent stimulus in most persons; seeing and smelling the food may be without effect in some. A few years ago, great importance was assigned to this psychic secretion of gastric juice, which was believed to initiate the processes of digestion in the stomach. Since the demonstration that the normal stomach is the seat of more or less continuous gastric secretion, however, the possible significance of the "appetite" secretion has become less convincing. If the mechanism is not necessary for health, Carlson [1] remarks, it is at least a factor of safety. He adds that the existence of a continuous gastric secretion minimizes the importance of therapeutic measures that are supposed to induce or augment the appetite gastric secretion.

The psychic secretion is of relatively brief duration. It is presently supplemented or replaced by a flow of juice called forth by factors within the stomach itself or, at least, far beyond the portals of the alimentary tract. Excitants of secretion evince their presence by a secondary output of gastric juice. Whether this is due directly to the effect of substances preformed in the ingested foods or to products liberated in the preliminary stages of digestion or to "gastrins" developed in the mucosa has already been debated in THE JOURNAL,[2] and need not be rehearsed here. Considerable evidence has accumulated that gastric secretion may be aroused also by the presence of food products in the upper intestine, though the possibility of such a "long distance" effect has been much debated. The subject is one of not a little importance, as it involves one of seemingly diverse ways that gastric digestion may be promoted. Ivy and McIlvain [3] have recently studied the question with greatly improved technic at the Loyola University School of Medicine. The experimental animals were prepared for the tests through the surgical production of an accessory stomach or Pawlow pouch and a Thiry fistula of the duodenum and jejunum. Thus it became possible to observe in a healthy subject the gastric responses of the gastric mucosa to substances introduced directly into the intestine without contamination of either alimentary surface with extraneous matter. No complicating factors, such as regurgitation of the solution into the stomach, there having an effect, and regurgitation of intestinal contents into the stomach modifying the gastric secretion, enter in for interpretation. The proof was clear that gastric secretion can be excited by the introduction of certain substances into the intestine. Substances known to be present in the intestine after the ingestion of a meal, such as peptone, glucose, organic acids, glycerol, free hydrochloric acid and histamin, were observed to excite a flow of gastric juice when introduced into a loop of duodenum and jejunum. Fresh meat and milk undigested were without effect when introduced into the intestine. The investigators hesitate at present to speculate on the mechanism concerned in the excitation of gastric secretion from the upper part of the duodenum; they feel certain, however, that it is not due to the absorption of water, the distention or motility of the intestine, or irritation of the mucosa. These studies add another item to our growing knowledge concerning the possible physiologic functions of the duodenum, a portion of the alimentary tract long left for the most part unexplored, but recently brought into unexpected prominence from a clinical standpoint.

1. Carlson, A. J.: The Secretion of Gastric Juice in Health and Disease, Physiol. Rev. **3**: 1 (Jan.) 1923.
2. The Gastrin Theory, editorial, J. A. M. A. **79**: 970 (Sept. 16) 1922.
3. Ivy, A. C., and McIlvain, G. B.: The Excitation of Gastric Secretion by Application of Substances to the Duodenal and Jejunal Mucosa, Am. J. Physiol. **67**: 124 (Dec.) 1923.

PIERSON W. BANNING—INTERNATIONAL FAKER

Two weeks ago THE JOURNAL carried in the Propaganda department a story regarding one Pierson Worrall Banning of Los Angeles and his book "Mental and Spiritual Healing: All Schools and Methods; A Text Book for Physicians and Metaphysicians." Banning had obtained international publicity for his book by means of a story to the effect that his work was such a stupendous literary and scientific accomplishment that its author had been awarded £2,500 by the trustees of the "Benjamin Franklin Fund" of London. Six months previously another piece of publicity had appeared in behalf of the same book. This was a story, purporting to emanate from the "Albany Chamber of Commerce," regarding the bringing back to life of a patient who had died "at the County Hospital at Albany." The resurrection had been accomplished by a woman who had learned the trick by reading Banning's "Mental and Spiritual Healing." This also was described in THE JOURNAL.

So well was the "Benjamin Franklin Fund" story worked that the London *Times*, the *British Medical Journal*, the New York *Times*, the *Literary Digest* and

some other equally high-grade publications published the matter as news. Banning took immediate advantage of the New York *Times* article by reproducing it, photographically, and sending it out with an elaborate "character sketch" supposed to describe Banning and to have been written by a "Dr. D. Pban."

When the "Albany Chamber of Commerce" story appeared the case was investigated by the Propaganda department and found to be wholly without foundation. At the same time, Banning's antecedents were looked into and the information thus obtained was filed for future use. Then came the present story of the "Benjamin Franklin Fund" award to Banning for his book "Mental and Spiritual Healing." A careful study of the book, coupled with the information already on file regarding Banning, led THE JOURNAL to declare that the "Benjamin Franklin Fund" did not exist and that the alleged award to Banning was a hoax. At the time THE JOURNAL published the article it took up the matter with the New York *Times* and presented to Mr. Millar, the Chicago staff correspondent of that paper, all the material it had accumulated on Banning. As a result Mr. Millar got in touch, not only with the New York *Times*, but with the Los Angeles *Times*, urging the former to cable London for more information regarding the alleged "Benjamin Franklin Fund" and the latter to investigate Banning. Cables from London brought out the fact that further investigation failed to disclose any such thing as a "Benjamin Franklin Fund."

The Los Angeles *Times* published THE JOURNAL'S article in its issue of March 30 and interviewed Banning regarding the matter; it followed the story up with another article the next day. Banning gave to the *Times* a long and confused explanation. First, he denied any responsibility for the "Albany Chamber of Commerce" narrative of last summer. His story of the "Benjamin Franklin Fund" award was that he had met a stranger in the lobby of a local hotel who had introduced himself as the representative of the trustees of the "Benjamin Franklin Fund." This, Banning said, was the first intimation he had that he had won the $12,000 award for the publication of his book "Mental and Spiritual Healing." Banning was also questioned about the publicity matter recently sent broadcast over the name of "Dr. Pban." This carried a flattering character sketch of Banning and went into details regarding the "Benjamin Franklin Fund" award. The explanation for this was that Dr. Pban had come to him and offered to sell a thousand copies of "Mental and Spiritual Healing," provided the commissions were satisfactory. Banning told him to go ahead.

While Banning was giving these explanations to the newspaper, the postal authorities were looking into the thing, as the United States mails had been used to promulgate these various stories. The officials also investigated the incidents leading up to the rental of a post office box in Los Angeles supposed to be in the name of the mysterious stranger who notified Banning of the "award."

All this time the Los Angeles newspaper men were gathering evidence against Banning. The man, evidently realizing that he could no longer continue to fool the public, finally confessed and in the Los Angeles *Times* for April 3 there appeared in full Banning's confession of the deceit and falsehood of which he had been guilty. Banning admitted that the Albany story had been concocted by him; that the "Benjamin Franklin Fund" story was a figment of his imagination; that there was no such man as "Dr. Pban" and that he had met no such individual as the alleged representative of the "Benjamin Franklin Fund." It was Banning who had rented a local post office box taken out in the name of the mythical representative of the equally mythical "Fund." The sole excuse given by Banning for the farrago of lies that he has sent out in his effort to sell his worthless book is that he did it as a joke in order to win a bet!

As THE JOURNAL has previously stated, Banning's book is shoddy in its typographic make-up and worse than shoddy in the scientific character of its contents. It would have been overpriced at 50 cents; Banning sold it for $3.50. The perpetrator of this international hoax excuses the fake by saying he did it as a joke. We trust the federal authorities will get from Banning the names of every individual who has bought "Mental and Spiritual Healing" and find out from each purchaser whether he considers the joke worth $3.50.

Current Comment

HEARTBURN

Heartburn is a disagreeable sensation that comes frequently to the attention of the physician. From this standpoint alone it demands such therapeutic consideration as will afford relief. Heartburn is furthermore a symptom of some physiologic or pathologic reaction that needs to be correctly interpreted if the causal factor is to be eradicated intelligently. The explanation of the pain felt in the epigastric region and usually referred to some disturbance of alimentary functions has been varied. It has often been pointed out that the viscera are, as a rule, insensitive to those methods of stimulation that produce pain in the external body wall. Mackenzie has reminded us that Harvey described the insensitiveness of the heart, and a great number of observers have testified that the other viscera are totally insensitive to stimulation. Thus, we are told that Haller demonstrated that the viscera of an animal could be cut or otherwise injured while it ate its food unconcernedly. Such considerations have led Mackenzie[1] and others to the conclusion that the pains commonly associated with parts of the digestive tube are referred pains and not direct. The burning pain of heartburn generally is felt over the lower part

1. Mackenzie, J.: Symptoms and Their Interpretation, New York, 1913.

of the sternum, in the region of the fifth thoracic nerve in the chest. Its immediate cause has been assigned by Mackenzie to a regurgitation of acrid contents of the stomach into the esophagus. He regards this explanation as supported by the frequency with which, in cases of heartburn, some of the stomach contents find their way into the mouth, resulting in pyrosis. In recent studies on man at Guy's Hospital, London, Payne and Poulton [2] have discovered that the pain felt in the epigastric angle is really due to events occurring in the lower end of the esophagus. They regard heartburn, however, as associated with some kind of tonic contraction, and with peristaltic movements of the esophageal muscle often attended with a rise in mean pressure in the tube. The relation of pain to such movements thus recalls the association of the "hunger pangs" frequently felt by man when the stomach is empty, with contractions of the gastric musculature.

CHIROPRACTOR—DIPHTHERIA—MANSLAUGHTER

A jury in the Brooklyn (N. Y.) Supreme Court has just found a chiropractor, Ernest G. Meyer, guilty of manslaughter, on account of "culpable negligence" in the treatment of a patient who died from diphtheria. The maximum penalty is imprisonment for from ten to twenty years. The chiropractor, it is stated, did not know his patient had diphtheria. A few verdicts such as this will go a long way toward preventing and curing such negligence. No man is required to treat a patient who is sick or injured. If he does so, however, he must recognize his accountability for his acts. If the would-be chiropractor can be made to understand this, there will probably be fewer adherents to the methods of that cult.

THE FRIENDS OF MEDICAL PROGRESS, INC.—ORGANIZATION OF LOCAL CHAPTERS

Cincinnati has just organized a local chapter of the Friends of Medical Progress, Inc., which, it is hoped, may be the forerunner of many similar chapters. The parent body, organized in Boston in 1923, has paved the way for a lay movement for the defense and promotion of medical research. The public, which chiefly benefits by this organization, should not be slow in identifying themselves with it. The first obstacle to be overcome is the fact that the public knows as yet little or nothing of the Friends of Medical Progress, Inc. Next is the lack of leadership necessary to crystallize action. Here the medical profession, with its special knowledge of the situation and of methods of organization, has a distinct opportunity for public service. Physicians may easily show a few of the leading citizens of the community that animal experimentation is for the sole purpose of prolonging life and of making more comfortable, efficient and happy the lives not only of men, but also of domestic animals; that organized efforts are being made by misguided persons to prevent investigation and to hamper investigators, and that there is need for a countermovement, if the progress of medicine is not to be retarded. Public spirited laymen with such evidence before them may then join in a call for a meeting to organize a chapter of the national body. A chapter, once organized, should promptly become an effective force for good in the community it serves. Physicians may well interest themselves in seeing that the laymen of other communities follow the example of the people of Cincinnati.

2. Payne, W. W., and Poulton, E. P.: Visceral Pain in the Upper Alimentary Tract, Quart. J. Med. 17: 53 (Oct.) 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Physicians' Civic League.—Ninety-two physicians of Birmingham and Jefferson County organized the Physicians' Civic League of Jefferson County at a meeting in the old Birmingham Medical College building, March 14. Dr. Watson S. Rankin, health officer of North Carolina, gave the principal address. Other speakers were Dr. Samuel W. Welch, Montgomery, state health officer of Alabama, and Dr. Dyer F. Talley, Birmingham, president of the league. The purpose of the league is "the enlightenment of the public in matters pertaining to health preservation and health legislation; ascertaining candidates' views on the maintenance of an efficient and adequate health department, and consolidation of power and influence to discourage unworthy candidates and promote those candidates who have the public welfare and health at heart."

CALIFORNIA

Japanese Physician Sentenced.—Dr. Junsai Watanabe, a Japanese physician of Los Angeles, was found guilty of violation of the Harrison Narcotic Law, March 29, and sentenced to serve 180 days in the city jail, according to reports.

Additions to Naval Hospitals.—Additional buildings costing $1,000,000 will be erected at the naval hospital in Balboa Park, San Diego during 1925. A bill was recently passed in Washington which will pay for the new structures, provided the city grants 5 acres of land on which to construct them. This bill also provides $1,500,000 for similar buildings at the Mare Island hospital and the one at Canacao, P. I.

DISTRICT OF COLUMBIA

Personal.—Dr. George W. McCoy, surgeon, U. S. Public Health Service, has been appointed consultant to represent the United States on the Permanent Standards Committee for the Standardization of Sera and Serologic Tests.

Government Hospital to Be Completed.—Director Hines of the U. S. Veterans' Bureau approved recommendations, March 29, to complete the Mount Alto Hospital, Washington. The work will start this summer and will cost about $110,000. A large recreation building and attendants' quarters are now under construction, and a nurses' home will be added, also necessary road improvements. The hospital will accommodate 280 patients.

Health Campaigns.—The annual campaign for the prevention and cure of cancer was held in Washington, under the auspices of the American Society for the Control of Cancer and the "Committee of 100," March 15 to April 15. Among others on the committee were: Drs. Merritte W. Ireland, Hugh S. Cumming, Edward R. Stitt, George M. Kober, John D. Thomas and Edward A. Balloch. Clinics were held, lectures were given and cancer films shown.——Alienists of the District at a recent meeting of the Council of Social Agencies urged the need for an adequate mental hygiene program in the District. It is planned to make a survey preparatory possibly to the establishment of a central mental hygiene clinic.

IDAHO

Child Welfare Work.—Baby clinics will be held in twenty-five counties during the summer months. They began, April 3, in Nez Perce County. Nurses will be sent in advance to prepare for clinics and after the examinations a nurse will stay in the field to do "follow-up" work. In 1923 the bureau examined more than 2,000 babies in nineteen counties.

ILLINOIS

Personal.—The staff of St. Anthony's Hospital, Rock Island, gave a dinner to Dr. George L. Eyster, March 27, in commemoration of his fiftieth year of practice in Rock Island. Dr. Thomas J. Watkins of Chicago gave an address.——Dr. Thomas A. Mann of North Carolina has succeeded Dr. Raymond V. Brokaw as director of the Morgan County Public Health Department.

New State Laboratory.—The state department of public health has completed arrangements to establish a branch diagnostic laboratory in connection with the Decatur and Macon County Hospital. Work at this laboratory will be confined to the examination of cultures for the diagnosis of diphtheria which will be done under the direction of Dr. Bartlett C. Shackford. This brings the total number of such branch laboratories in the state to seven, the other six being located at Chicago, Galesburg, Moline, Ottawa, Urbana and East St. Louis.

Chicago

Personal.—Dr. Durward R. Jones, Chicago, has been appointed health officer of Pennington County, South Dakota, to succeed Dr. Henry J. T. Ince.

INDIANA

Illegal Practitioner Fined.—"Dr." S. W. Walker, colored, who posed as a manufacturer of health invigorators, was fined $100 and $130 costs in the Gary police court, March 21, for illegal practice. Walker was advised to return to Illinois from whence he went to Gary, according to reports.

A Convalescent Park.—Plans have been completed for the development of Convalescent Park, Indianapolis, a tract of 100 acres on which the James Whitcomb Riley Hospital for Children, the Robert W. Long Hospital and the City Hospital are situated. The park will serve the three hospitals for the use of convalescent patients.

IOWA

Medical Legislation Fails.—Efforts of physicians of the state to have the legislature prohibit the use by osteopaths, chiropractors and other cultists of the word "physician," failed in the senate, March 26, when that body passed an amendment which included those cultists in the general definition in the public health bill.——The amendment to code bill 283 of Senator McIntosh to limit the amount of liquor a druggist might handle in one year to 25 gallons, was voted down, March 12, in the senate 10 to 35.

KENTUCKY

New President of State Board.—Dr. Joseph E. Wells, Cynthiana, was elected president of the state board of health, April 2, for the unexpired term of the late Dr. Lewis S. McMurtry. Dr. Wells formerly was president of the state medical association.

Nurses Receive Awards.—Of the $10,000 in scholarships awarded to twenty public health workers throughout the nation by the American Child Health Association $1,000 was awarded to Miss Metcalf of Letcher County; $500 to Miss St. Claire Pease of Wooton and $250 to Miss Hauswald of the state board of health, Louisville.

LOUISIANA

Memorial Hospital Opened.—The Mercy Hospital, New Orleans, dedicated to the memory of Leonce Soniat by his wife, was opened in March. The new institution is owned by the Sisters of Mercy and has a capacity for from sixty to 100 patients. Mrs. Soniat paid $100,000 for the property. Dr. Edmund L. Leckert, city health officer, is chairman of the board.

MARYLAND

Personal.—Dr. Irving J. Spear, Baltimore; Dr. Lewis V. Guthrie, superintendent of the Huntington State Hospital, W. Va.; Dr. Raymond K. Foxwell, Washington, D. C., and Dr. Alfred L. Gray, Richmond, Va., have been appointed to make a survey of war veterans who are neuropsychiatric patients in hospitals in the Fourth District.——Prof. H. Finkelstein of Berlin spoke on "Recent Investigations Concerning Child Milk Feeding" in the medical amphitheater of the Johns Hopkins Medical School, March 28.——Dr. James Harry Ullrich has been elected president of the Rotary Club of Baltimore for the year commencing June 1.——Dr. William A. White, Washington, addressed the semiannual meeting of the Baltimore City Medical Society, April 4, on "The Mind and Its Significance in Medicine as Viewed by Psychiatrists."——Dr. Calvin B. Goddard, Johns Hopkins Hospital, Baltimore, has been appointed to succeed Dr. George H. Bigelow as superintendent of the Cornell Pay Clinic, New York City.——Dr. Rupert Blue, U. S. Public Health Service, and Dr. Noble P. Barnes, both of Washington, D. C., delivered addresses before the West Baltimore Medical Association in Baltimore, March 18, at the sixth annual dinner of the society.

MASSACHUSETTS

Hospital News.—Hahnemann Hospital, Worcester, has completed plans for a $300,000 hospital building and power house.——The top floor of the administration building of the Sassaquin Tuberculosis Hospital, New Bedford, was destroyed by fire, March 14.

Harvard Fund in Honor of Dr. Eliot.—In honor of President Emeritus Charles W. Eliot, a loan fund of $2,000 has been established anonymously at the Medical School of Harvard University, Boston. It will be used to assist needy students in the medical school under provisions to be determined by the dean.

The Registration of Practitioners.—The committee on public health of the state legislature to which was referred a petition (accompanied by several senate bills regarding the registration of practitioners) reported as follows:

Ordered.—That a joint special committee to consist of three members of the senate and five members of the house of representatives to be designated by the president of the senate and the speaker of the house, respectively, shall sit during the recess of the general court for the purpose of investigating every aspect of the organization, practice and procedure of the various divisions of registration in the department of civil service and registration, with the particular reference to the methods of examining and registering applicants for examination or registration, the advisability or necessity of increasing or lowering the prescribed requirements for the registration of such applicants, and the enforcement of the laws governing said registration by duly appointed inspectors of said department. The committee shall also consider the subject matter of current House bill No. 223 relative to the practice of midwifery and the registration of midwives, of current House Bill No. 293 relative to the registration of nurses and nursing attendants, and of current House bills 746 and 1071, relative to the registration of persons practicing chiropractic. The committee shall have quarters in the state house, may hold hearings, may require the attendance and testimony of witnesses and the production of books and papers relating to any matter under investigation, and may administer oaths to witnesses testifying before it. It may employ such assistance as may be necessary and may expend, from such amount as the general court may appropriate, such sums, not exceeding $10,000, as may be approved by the governor and council. Said committee shall report the results of its investigation, together with such recommendations and drafts of legislation as it may deem advisable to the next general court, not later than Jan. 14, 1925.

MICHIGAN

Chiropractor Fined.—According to reports, Walker Brown, a chiropractor of Greenville, was sentenced to six months in the county jail, March 17, when he refused to pay a fine of $100. Brown was charged with practicing medicine without a license.

Personal.—Dr. Earl H. Campbell, superintendent of the Newberry State Hospital, has been appointed superintendent of the Traverse City State Hospital to succeed Dr. James D. Munson, who resigns, July 1. Dr. Campbell's successor at Newberry has not been named.——Dr. Percival C. Strauss, Bay City, has been appointed city physician of Lansing to succeed the late Dr. Howard M. Holcomb.

MISSISSIPPI

Hospital News.—The new hospital at the Jefferson Davis Beauvoir Soldiers' Home, Biloxi, erected at a cost of $50,000, was opened to the public, March 30.——The Vicksburg State Charity Hospital, Vicksburg, has appointed Dr. Sydney W. Johnston director of the institution.

MISSOURI

St. Louis Medical Society's Building.—The sum of $100,000 has been pledged and a plot of ground on Lindell Boulevard purchased for the new home for the society and its library. A drive to raise $275,000 is being conducted.

Memorial Service for Dr. Mills.—The St. Louis Medical Society held a memorial service at Washington University Medical School, St. Louis, for the late Dr. R. Walter Mills, March 16. Dr. Russell D. Carman, professor of roentgenology, University of Minnesota; Dr. Evarts A. Graham, professor of surgery, Washington University Medical School, and Dr. Hanau W. Loeb, dean of St. Louis University School of Medicine, gave addresses. At the time of his death, Dr.

Mills was president of the American Gastro-Enterologic Association and associate in clinical medicine at Washington University Medical School.

NEBRASKA

Hospital News.—A new woman's ward is under construction at the Hospital for the Insane of Nebraska, Norfolk, at a cost of $90,000.——A new building is to be erected at the Nebraska Institution for the Feebleminded, Beatrice, at a cost of $100,000.——A five-story nurses' home, an addition to the Creighton Memorial St. Joseph's Hospital, Omaha, housing 180 persons, was dedicated, March 19.——Dr. Dexter D. King, York, has purchased the property of the York Clinic and Clinic Hospital.

NEW JERSEY

Joint Medical Meeting.—The Warren County Medical Society and the Hunterdon County Medical Society held a joint meeting in Washington, April 9. Dr. Elmer H. Funk, associate professor of clinical medicine, Jefferson Medical College, Philadelphia, spoke on "Modern Aspects of Nutritional Disorders."

NEW YORK

Memorial to Dr. Berens.—A fund of $10,000 is being collected for a permanent memorial to the late Dr. T. Passmore Berens, who was professor of otology at the Manhattan Eye, Ear and Throat Hospital and Medical School. The memorial will take the form of endowing a bed in this hospital.

Memorial Health Building.—Watertown has erected a health building as a memorial to men of that city who were killed during the World War. The memorial cost $50,000, and the site was donated. The building houses also the local Red Cross and tuberculosis, child welfare, dental and other clinics.

State Hospital Construction.—Plans are being made to convert the former prison farm at Wingdale into a state hospital for the insane. It is said that more than $2,000,000 will be expended in new construction.——Work has begun on plans for an addition to Kings Park (Long Island) Hospital, known as the War Veterans' Memorial, and when completed plans will be made for an addition at Creedmoor, L. I.

Society News.—The New York State Association of Public Health Laboratories will hold its annual meeting in Rochester, April 22.——The annual conference of health officers of the state of New York will be held in Saratoga Springs, June 24-26.——At the nineteenth annual meeting of the New York Society of Anesthetists in New York, March 20, the following officers were elected for the ensuing year: president, Dr. Robert B. Hammond; vice president, Dr. James M. Gates, and secretary-treasurer, Dr. A. Frederick Erdmann.

Conference Board of Physicians in Industry.—This organization, which acts in an advisory capacity to the National Industry Conference Board, met at the Hotel Astor, April 4-5, under the chairmanship of Dr. John J. Moorhead. Among the speakers were Dr. William H. Park, Surg. Gen. Hugh S. Cumming, Dr. W. Gilman Thompson and Dr. Frank L. Rector. The first of a series of clinical demonstrations was given in the clinical amphitheater of the Post-Graduate Hospital. The Conference Board in Industry was organized in 1914 to cooperate in introducing into industry the most effective measures for the treatment of employees, for promoting sanitary conditions in workshops and for the prevention of industrial diseases.

New York City

Quack Advertising Barred.—At a meeting of the city board of health, recently, a committee of public spirited citizens was organized to enforce the law against quack advertisements appearing in foreign language newspapers.

Harvey Society Lecture.—Dr. Herbert M. Evans, professor of anatomy at the University of California Medical School, Berkeley, will deliver the seventh Harvey Society Lecture at the New York Academy of Medicine, April 26. His subject will be "The Function of Anterior Hypophysis."

Post-Graduate Lecture.—The course of Friday afternoon lectures given at the Post-Graduate Medical School and Hospital during the winter will be concluded, May 2, when Dr. Edward W. Peterson will speak on "A General Consideration of Surgery in Children with Special Reference to the Most Important Abdominal Affections."

Neurology Courses.—Under the department of neurology of the School of Medicine and University Extension of Columbia University, short courses in neurology will be given daily from April 7 to May 30, by Drs. Alfons Jakob, University of Hamburg; G. V. Anrep, University College of London, and C. A. Ariens Kappers, director of the Central Brain Institute, Amsterdam.

Dr. Rubin Expelled.—At a regular meeting of the Medical Society of the County of New York, March 24, Dr. Herman H. Rubin was expelled from membership in that society and also from membership in the Medical Society of the State of New York. Rubin is the so-called medical director of the Gotham Corporation which sells on the mail-order plan an alleged cure for obesity. It was exposed in THE JOURNAL, March 1. Rubin also exploits the "Radiendocrinator."

More Quacks Arrested.—In the campaign to rid New York of quacks (THE JOURNAL, March 29, p. 1054) the special service squad recently arrested several more illegal practitioners. Jesse Applebaum of 103 West One Hundred and Eighteenth Street, and Jesse Chankin of Forty-Sixth Street were charged with illegally practicing medicine. Ernest G. J. Meyer, a chiropractor of Brooklyn, is on trial charged with manslaughter; Mrs. Julia Riccione, Brooklyn chiropractor, was held in $1,000 bail charged with practicing illegally; Lena Miller, aged 65, Fulton Avenue, the Bronx, is under $5,000 bond charged with performing an illegal operation which resulted in the death of Mrs. Fleagel; Henry H. Austin, One Hundred and Eighty-Fourth Street, was arrested for posing as "Dr. Paul J. Wentworth," head of the Wentworth Health Institute of New York, and for practicing chiropractic without a license; he is held in $2,500 bail; Giuseppe Feletti was arrested some weeks ago and was held, March 28, on $3,000 bail for the court of special sessions.

Hospital News.—The first wing of the new Brooklyn Cancer Research Hospital was formally opened, March 1.——The new laboratory of the New York Nursery and Child's Hospital has been completed. Its two stories, with a library, six laboratory rooms and offices, are intended for research in pediatrics.——A children's clinic was opened at the Bushwick Hospital, Brooklyn, March 9. It will give special attention to bottle-fed infants. Dr. Augustus P. Northridge will supervise the work and Dr. Joseph F. Paulonis and Sylvan D. Lazarus will be in attendance.——The medical board of St. Luke's Hospital has elected the following officers: president, Dr. Henry S. Patterson; vice president, Dr. Francis Carter Wood; secretary, Dr. Winfield S. Schley.——The monthly clinical meeting of the medical and surgical staff of the West Side Hospital and Dispensary was held, March 31. The program was: (1) "Cutaneous and Other Manifestations of Syphilis," illustrated by lantern slides, Dr. Herman Goodman; (2) "Intravenous Medication: Simplified Technic," Dr. James H. Heacock; (3) The discussion was opened by Drs. E. S. Potter and M. D. Rose.——At the annual meeting of the directors of the Wyckoff Heights Hospital, it was announced that tentative plans had been drawn for the new annex to the hospital. A campaign will be started to raise $200,000 more for the new building.——The new $1,000,000 maternity pavilion of the Methodist Episcopal Hospital, Brooklyn, was formally dedicated, March 24. In company with the dedication exercises the Florence Nightingale Federation collected $10,000 for the equipment of the pavilion. The new addition is six stories high and has 100 beds. It is modeled after the Lying-In Hospital, Chicago.——The Samaritan Hospital, Brooklyn, has purchased the Skene Sanatorium for a permanent location; its Bay Ridge property will be sold.——The Society of the New York Hospital, operating the New York Hospital, the Bloomingdale Hospital and the Campbell Convalescent Cottages, White Plains, has opened a campaign to raise $100,000 to meet the estimated deficit for the current year.——A clinic for the treatment of kidney disease in children and infants has been opened at the New York Hospital under the auspices of the urologic department, James Buchanan Brady Foundation.

NORTH CAROLINA

Illegal Practitioner Forfeits Bail.—Harry Wolfe, Indian herb "doctor," forfeited a cash bond of $100 by failing to appear in court in New Bern to stand trial for practicing medicine without a license, according to reports.

OHIO

Chiropractor Fined.—According to reports, E. M. Bossler, chiropractor of Toledo, was fined $75 and costs on two charges, March 19. He was found guilty of practicing medicine without a license, and failure to report a communicable disease.

Cleveland Academy of Medicine.—At the meeting of the section on obstetrics of the academy, March 28, papers were

read by Dr. Joseph B. DeLee of Chicago on the "Low Cervical Incision in Cesarean Section," and Dr. George C. Mosher, Kansas City, Mo., chairman of the committee on maternal welfare of the American Association of Obstetricians, on "Mortality in Obstetrics and Its Prevention."

Personal.—Dr. Roy C. Hunter, Wapakoneta, has been appointed health officer of Auglaize County, to succeed the late Dr. Carl L. Mueller.——Dr. John J. Sutter, Lima, health commissioner of Allen County, was reelected president of the Northwestern Ohio Health Commissioners' Association, at the annual meeting in Findlay, February 28.——Drs. Oral D. Tatje and Treber C. Crawford have been appointed health commissioner and city physician, respectively, of Portsmouth.

OKLAHOMA

"Roll-Call" Smoker.—More than 100 physicians, members of the Oklahoma County Medical Society, attended a "roll-call" smoker, March 22, at the Chamber of Commerce, held under the presidency of Dr. William H. Bailey, Oklahoma City. At roll call each physician answered with a brief history of his medical career.

PENNSYLVANIA

Philadelphia

Medical Club Celebrates.—The Medical Club of Philadelphia celebrated its thirty-third anniversary with a banquet and concert, March 20. Dr. George C. Yeager presided.

Women's Homeopathic Hospital Drive.—The campaign of the Women's Homeopathic Hospital for funds for building a maternity hospital ended, March 28. A total of $118,021 was collected. The new building will be dedicated to the memory of Miss Emma Schaperkotter, who was treasurer of the hospital for fifteen years.

Personal.—Dr. Joseph C. Doane, superintendent of the Philadelphia General Hospital, was elected president of the Hospital Association of Pennsylvania, April 3.——Dr. Oscar M. Schloss, professor of pediatrics at Cornell University Medical School, delivered the annual Frederick A. Packard lecture before the Philadelphia Pediatric Society in the College of Physicians, April 8. His subject was "Ketosis in Children."——Rear Admiral Edward R. Stitt, Surgeon General, U. S. Navy, was guest of honor at the reception of the Medical Club of Philadelphia, April 11.

Jewish Federation Opens Health Center.—The third anniversary of the founding of the Health Center of the Federation of Jewish Charities was commemorated, March 13, by the opening of a new building at Ninth and Pine streets, Philadelphia. Dr. Haven Emerson, professor of public health administration at Columbia University, New York, dedicated the new structure. Dr. David Riesman, president of the College of Physicians of Philadelphia, presided. More than 4,000 cases have been handled yearly since the old center was opened, three years ago. The clinic is nonsectarian.

Health Survey Before Sesqui-Centennial.—A recommendation that a general health survey of Philadelphia be made "as a necessary preliminary to the sesqui-centennial celebration" was made April 1 to the public health administration section of the American Public Health Association in a report presented by Murray P. Horwood, assistant professor of biology and public health at the Massachusetts Institute of Technology. He has made an exhaustive study of health conditions in this city and in the report includes thirty-one recommendations for improvement in city methods of fighting infectious diseases. The sesqui-centennial health survey is intended to eliminate the possibility of contagion to the hundreds of thousands of visitors who are expected to visit Philadelphia in the summer of 1926.

RHODE ISLAND

Osteopath's License Revoked.—The Rhode Island State Board of Health, March 21, revoked the osteopathic license of "Dr." Harry G. Sylassey, alleged "diploma mill" graduate of Woonsocket. Sylassey was licensed by the state board of health, April 9, 1922, when he presented a certificate purporting to have been signed by eight Woonsocket physicians, attesting to the fact that he had been a practicing osteopath in that city since 1911. At the hearing by the health board, that body decided that signatures on this document were palpable forgeries. Prior to his admission to practice by the osteopathic board, Sylassey had been arraigned in the Eleventh District Court on a warrant sworn out by Dr. Byron U. Richards, secretary of the state board of health, charging him with practicing medicine illegally, according to reports. Sylassey claimed graduation from the International College of Osteopathy, Elgin, Ill.

SOUTH CAROLINA

New Health Bills.—The bill requiring a medical examination of male applicants ten days prior to the date set for the marriage ceremony passed the house, March 8, by a vote of 76 to 24.——A new department under the state board of health to care for the teeth of school children would be created by a bill introduced by Senators Wells, Williams, Butler and Stewart, which was recently passed by the senate. The bill carries an appropriation of $25,000 for establishing the department and for maintaining dental clinics; 50 cents would be charged for treatment, when parents could afford that amount.

TENNESSEE

Hygiene Course Typhoid Sequel.—As a sequel to the recent typhoid epidemic at Lincoln Memorial University (The Journal, March 8, p. 802) a new course in personal and home hygiene has been added to the curriculum. A health center will be established at the university.

Banquet for Physician.—Dr. Duncan Eve, Sr., Nashville, oldest member of the faculty of the Vanderbilt University Medical Department, received a loving cup from the senior class of the medical school on the anniversary of his fiftieth year of practice, at a banquet in his honor, March 10. Dr. Eve was formerly dean of the medical school and at present is professor of surgery and clinical surgery.

UTAH

Chiropractor Sentenced.—According to the state department of registration, O. F. Waldram, a chiropractor, was convicted of the illegal practice of medicine and fined $250 with the option of six months in jail, March 26, in Salt Lake City. He has appealed.

WASHINGTON

Personal.—Dr. Charles E. Watts, Seattle, has been elected secretary-treasurer of the Kings County Medical Society to succeed Dr. Raymond F. Hain, Seattle.——Dr. George N. McLoughlin has been appointed city health commissioner of Seattle to succeed Dr. Hiram M. Read, resigned.

Society News.—At the annual meeting of the Seattle Urological Society, March 15, Drs. Herbert M. Greene and Albert E. MacKay of Portland, and Dr. Frederick H. Brush, Yakima, were guests of honor. Dr. Alexander H. Peacock was elected president for the ensuing year: Dr. O. A. Nelson, vice president, and Dr. Walter Ray Jones, secretary-treasurer.

CANAL ZONE

Canal Zone Accepts National Board Certificate.—Dr. Henry C. Fisher, chief officer of the health district of the Panama Canal Zone, recently notified the National Board of Medical Examiners that his department will be pleased to accept the certificate of the board as an adequate qualification for a license to practice medicine in the Canal Zone.

CANADA

Physicians as Mayors.—At the town elections in Nova Scotia, recently, five members of the medical profession were elected mayors: Dr. William F. MacKinnon, Antigonishe; Dr. E. DuVernet, Digby; Dr. James A. Proudfoot, Inverness; Dr. John A. Sponagle, Middleton, and Dr. Harry B. Havey, Stewiacke.

Banquet for Dr. Birkett.—A complimentary dinner was tendered to Brig. Gen. H. Stanley Birkett, professor of otolaryngology at McGill University Faculty of Medicine, Montreal, Quebec, on the occasion of his twenty-fifth anniversary as head of the department of otolaryngology in the Royal Victoria Hospital. The hosts of the evening were the present members of Dr. Birkett's staff and his former house surgeons. Dr. E. Hamilton White presided.

Society News.—At a meeting of the pediatric section of the Winnipeg Medical Society, February 8, Dr. Frederick C. Rodda, professor of pediatrics at the University of Minnesota Medical School, Minneapolis, was the guest of honor. He spoke on "Hemorrhagic Diseases of the New-Born."——The Winnipeg Medical Society, January 6, gave a luncheon for Dr. Charles F. Martin, dean of McGill University Faculty of Medicine, Montreal. Dr. Ernest S. Moorhead, president of the society, occupied the chair. Dr. Martin spoke on

Canadian medical problems.——Dr. Ernest E. Cleaver, Toronto, recently addressed the Brant County (Ont.) Medical Society in Brantford, on "The Interpretation of the Signs and Symptoms of Chronic Gastro-Intestinal Disease."

GENERAL

Red Cross Conference.—A two-day regional conference of the American Red Cross will be held at the Waldorf-Astoria Hotel, New York, April 14, at which fifteen countries are to be represented. Exhibits of the work of the organization in eastern and southern New York are planned.

Society News.—The fifty-first annual meeting of the Northern Tri-State Medical Association (Indiana, Ohio and Michigan) was held in South Bend, Ind., April 8, under the presidency of Dr. Harry F. Mitchell. Dr. John F. Erdmann, New York, and Dr. Frederick W. Hipwell, Toronto, Canada, were the principal speakers.

National Academy of Science to Dedicate Building.—The sixtieth annual meeting of the National Academy of Sciences will be held in Washington, D. C., April 28-30, in the National Academy Building. The meeting will celebrate the acquisition and occupation of the new building, and dedicatory exercises will be performed. It is expected that President Coolidge will be present.

Ways and Means Committee Reports Favorably on Heroin Bill.—The bill, introduced by Representative Porter, prohibiting the importation of crude opium to be used in the manufacture of heroin has been favorably reported by the Ways and Means Committee of the House. Hearings have been held on the measure. Dr. Charles W. Richardson, Washington, D. C., representing the American Medical Association, advocated outlawing heroin. He stated that the U. S. Public Health Service, the army and navy forbade its use, and that the American Medical Association had suggested that it be eliminated from medical practice.

The Physicians' Home, Inc.—An appeal for funds is being sent out by the Physicians' Home, Inc., at Caneadea, N. Y. One hundred and eighty acres of land, a house and barn have been given to the institution. The home has a waiting list, and an addition to care for twelve to fifteen more indigent physicians is essential. The institution cares not only for the physician but for his dependent family. This is now, it is said, the only home of this kind in the United States, but the board of trustees hopes to establish a unit in the South and one in the West. Checks should be made payable to "Physicians' Home, Inc.," and sent to Dr. Albert G. Weed, treasurer, 152 West Fifty-Seventh Street, New York City.

Tri-State Society's Clinical Tour.—Preliminary announcements have been received of the clinic tour to Canada, the British Isles and France of the Tri-State District Medical Association in 1925. The party will leave about the middle of May and the tour will consume about two months' time. The total cost from Chicago and back will be less than $1,000, including all arrangements, admissions and traveling expenses, except meals on Pullman cars in America. Passage will be taken on one of the largest ocean liners. Clinics are being arranged in Dublin, Belfast, Liverpool, Manchester, Leeds, Edinburgh, Glasgow, Newcastle, London, Paris and other places. For further information apply to Dr. William B. Peck, managing director, Freeport, Ill.

American Chemical Society.—The annual meeting of the American Chemical Society will be held in Washington, April 21-25. An attractive program has been arranged for this meeting and various chemical industries and government departments have made preparations for inspection excursions by the visiting scientists. The secretary of the society states that all members of the American Medical Association are cordially invited to attend the meetings. On Tuesday, April 22, the Division of Chemistry of Medicinal Products will devote the day to the following papers: "The Present State of Our Knowledge in Regard to the Chemistry and Functions of the Pituitary Gland," by Prof. John Abel; "The Intricacies of Large Scale Production of Insulin and Its Unusual Bio-Chemic Reactions," by Dr. G. Clowes; "The Chemistry of Vitamins," by Dr. Atherton Seidell of the Hygienic Laboratory. Other chemotherapeutic problems will also be discussed.

Smallpox in Various States.—At one time or another since the first of the year smallpox has been reported from thirty-six states and the District of Columbia, in many places in virulent form, as in the recent outbreak in Ontario, Canada, and Michigan. Twenty-one deaths in Ontario, it is said, were traceable to a case of hemorrhagic smallpox. California reported three cases of blindness due to smallpox. More than 100 cases have been reported from St. Louis County, Minn., where eleven deaths have occurred since January, according to the secretary of the state board of health. Martin County also reports fourteen cases with three deaths. This week Topeka, Kan., reports cases. Ohio reported 332 cases between March 1 and March 15 of this year. Seventy-four cases have been reported in Indiana. Epidemic smallpox is reported from Hopkins County, Texas; and Iowa, Maryland, Connecticut Tennessee, North Carolina, Maine and South Carolina all report cases. Reports from Washington, D. C., state that twice the number of cases of smallpox have been reported in February of this year as compared with February of 1923.

Committee on Agriculture Approves Establishment of Dairy Bureau.—The bill to establish a dairy bureau in the Department of Agriculture has been approved by the Committee on Agriculture of the House of Representatives. The bill makes departmental changes in such a way as to give greater importance and efficiency to the Bureau of Dairying. The report of the committee states:

> Many experiment stations and other institutions outside the realm of dairying are engaged in experimentation and are carrying on practical demonstrations to develop the dairy industry, to extend its benefits, and to show the food value of its products. Their efforts are most commendable, but there are many basic problems, national in scope, that logically and rightfully should be handled by the federal government. We, at present, have a dairy division which is doing constructive and commendable work, but its facilities are too small, its power too limited, and its activities too circumscribed to permit it to render the kind of service required by the nation. This is not a criticism of those now directing the work of the Bureau of Animal Industry or the dairy division. It is a statement of fact, resulting from the growth and development of dairying. We have simply outgrown the dairy division. We need to enlarge the scope and power of the dairy division and there is little opportunity so long as it is a division and not a bureau.
>
> The dignity, the necessity, and the magnitude of the dairy industry and its service to the people of the nation demand no less recognition than is carried in a bureau.

Finance Committee Refuses Reduction in Medical Taxes.—The amendments to the Tax Reduction Bill, restoring the fees of physicians under the Harrison Narcotic Law to a peace-time basis, and providing for deduction of traveling expenses and expenses of postgraduate study, failed to secure enough votes in the Committee on Finance of the Senate for adoption. The amendments were proposed by Senator Medill McCormick, Illinois, a member of the committee. Failure of adoption of the amendments was not due to lack of inherent merit, but because so many reductions in taxes had already been made that the Committee on Finance, at its concluding sessions, was compelled to reach out and find new sources of revenue to overcome a threatened deficit in the budget. The committee accordingly voted to restore the tax on telephone and telegraph charges; raised the tax on jewelry; put a tax on radio outfits, and raised the tax rate on corporations. The Treasury Department had shown that the estimated revenues from the tax bill in the form in which it came from the House of Representatives would be from $125,000,000 to $200,000,000 less than the estimated expenses for the next fiscal year. This prospect alarmed administration leaders, including Secretary Mellon. The committee, accordingly, voted down amendments which would reduce revenue, and has been consistently adopting amendments which would help increase the government's income. Several members of the Committee on Finance were of the opinion that the government ought not to make a profit of several hundred thousand dollars each year from physicians, on account of the Harrison Narcotic Act. Yet, the vote of the committee seemed to turn on the general question of keeping the estimated income of the government above estimated expenses.

LATIN AMERICA

Dispensary for Lepers.—Domiciliary treatment of lepers has assumed such proportions at Rio de Janeiro that it is proposed to have a special dispensary to which they can come for systematic treatment.

Personal.—The Argentine public health service has invited Dr. Muehlens, professor at the Institute for Tropical Diseases at Hamburg, to come to Argentina to study the malaria situation.——The dean of the Paris faculté de médecine recently tendered a banquet to a number of Latin American physicians visiting Paris. The guests of honor included Drs. Montoya y Flores of Colombia, Cueva of Ecuador, Goldeano and Capello of Argentina, Figuera of Guatemala, Machado and Gasperi of Venezuela, Etchepare of Uruguay, and Kohly of Cuba.——Dr. Wenceslas Pareja, director of the public health service of Ecuador, has arrived in England to join the League of Nations course for health officers. Dr. Pareja has been attached to the Yorkshire group and Dr. Paz of the Argentine to the Hampshire group.

FOREIGN

The Septicentennial of Naples University.—This celebration will open, April 29, and continue for two weeks. The official inauguration will be held, May 4, in the San Carlo theater, followed by a banquet and concert. The International Congress of Philosophy opens, May 5, as part of the celebration. Many universities and many governments are sending delegates.

Royal Society Host to Exchange Officers.—A special meeting of the fellows of the Royal Society of Medicine was held in London, April 10, to receive the medical officers who are taking the "exchange course" in England under the League of Nations. Dr. Rajchman, medical director of the League of Nations Secretariat, spoke on the health work of the league. Sir William Hale-White presided.

American Hospital in Turkey Reopened.—Orders have been given by the Turkish government at Angora to permit the American Hospital at Aintab to reopen. The Turks issued an order in October, 1923, forbidding foreign physicians to practice. Dr. Shepard, who was in charge of the institution, arranged to have the work continued under a Turkish physician, but this was not permitted, and the hospital was closed. Dr. C. C. Piper is now aiding Dr. Shepard, and clinics were resumed, February 15. Money is urgently needed. Checks should be mailed to the "Trustees of Donations for Education in Turkey," 14 Beacon Street, Boston.

Meeting of International Union Against Venereal Peril.—There are nineteen nations represented in this organization, including Austria, Brazil, Canada and the United States. At the recent annual meeting at Paris, the delegates from different countries gave detailed descriptions of what is being done to repress venereal disease in their countries. Professor Bayet of Belgium presided. Dr. Léon Bernard was the delegate of the League of Nations, Dr. Carozzi of the International Labor Bureau, and Mme. de Sainte Croix of the International Women's Council. Concerted action for the coming year was organized, especially the work of the Seaport Commission. The former minister of hygiene and the members of the French Antivenereal Disease League invited the delegates to a banquet at the close of the meeting.

Government Services

Physiotherapy Course at Walter Reed Hospital

The 1924-1925 training course in physiotherapy for aides given at the Walter Reed General Hospital, Washington, D. C., will begin October 3, and continue for six months. Applicants must be graduates of an accredited school of physical education. Among the subjects taught will be electrotherapy, anatomy and physiology, massage, hydrotherapy, thermotherapy, orthopedics, general medicine and surgery, dermatology, psychiatry, venereal disease, gynecology and public sanitation. Further information may be obtained from the commanding officer of the hospital.

Training Camps for Medical Reserve Officers

Provision has been made for the training of officers of the Army Medical Department Reserve, assigned to the Branch Assignment Group. Camps of instruction will be conducted at: Carlisle Barracks, Pa., for the First, Second, Third, Fourth and Fifth Corps Areas; Fort Snelling, Minn., for the Sixth and Seventh Corps Areas; camp not yet selected in the Eighth and Ninth Corps Areas.

It is planned to give officers of the Medical Reserve Corps who can accept training at these camps during the period, instruction in tactics and the technic of operation of divisional medical units. It is hoped it may be possible to stimulate interest among officers of the Reserve Corps in the Branch Assignment Group, and to make these camps an agency in improving the efficiency of officers classified for duty with units in the Branch Assignment Group. These camps will be for a period of two weeks, beginning about July 7. Officers interested should apply to the Surgeon General of the Army direct, indicating their desire to be ordered to active duty for a period of two weeks, for the purpose of training. In their applications, they should state that they have not been on active duty for training during the present fiscal year. Officers ordered to active duty for training receive mileage to and from camp and the pay and allowances of their grade.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 17, 1924.

The Electronic Reactions of Abrams

Notwithstanding the fantastic claims made for his "diagnosis box," Abrams has quite a number of followers in this country among qualified physicians. The marvelous results of wireless telephony seem to have prepared persons with a limited knowledge of physics to believe that ethereal vibrations can do anything. The lay press, always eager for the sensational, is full of the subject. We are informed that no fewer than 7,000 physicians in America report remarkable results from practice on electronic lines. Seven London physicians are said to have visited America to study Abrams' vibration apparatus. Here is a description given by one: "A woman came to me in poor health but could not tell me any special symptoms. From a drop of her blood on blotting paper I discovered by using Abrams' apparatus that she had bad tonsils, bad teeth and several other diseases." Why he did not discover these common conditions by ordinary methods of examination is not explained. An oscilloclast, which will treat eight patients at once, is described. The patients are placed in private cubicles in which they rest on comfortable couches while receiving the treatment. The machinery is supplied with electric current. As in wireless telephony, the "units" are tuned to the "wave" of each disease. The theory is that affected parts are shattered or neutralized by a superdose of their own vibrations. A point to be considered in the adoption of this treatment is that it is very lucrative. One of these practitioners wrote to a woman stating that by examining a drop of her blood he had found that she had cancer of the left breast. "I am sure," he wrote, "that I can help you. You would have to come to my clinic daily for from four to six weeks. My fee is $150 per month payable in advance."

Discussion of Abrams' methods has even been inaugurated in the medical journals. In a previous letter (The Journal, March 1), their adoption by a well known physician and former vice president of the British Medical Association was reported. In the *British Medical Journal*, March 15, is published an address to the Manchester Medical Society on the "Electronic Reactions," by Sir Thomas Horder. The adoption of Abrams' methods by physicians with whom he comes into contact has led him to interest himself in the subject. He is in close touch with some men who are using the machine purely for scientific investigation; among these are a trained physicist and a wireless expert. While characterizing Abrams' claims as unreasonable, he considers that the theory of Dr. Boyd of Glasgow, who has simplified Abrams' apparatus and produced one which he calls an "emanometer," is at any rate rational. But Horder's experience of cases treated by electronic methods is that the diagnoses made were either wrong or could be accounted for on the doctrine of chances. While asking for further investigation of the method by physicists and clinicians on strictly scientific lines, he does not consider that its exploitation by physicians in the meantime is ethically sound.

The Psychology of Industry

The report read at the annual meeting of the National Institute of Industrial Psychology, which has just been held, shows what a great saving can be effected by a study of the human factor. By introducing at a catgut factory devices that abolished needless fatigue and waste of effort, a 33 per cent. saving in time, a 50 per cent. reduction in counting, and a 70 per cent. reduction in wastage were accomplished. In

a glassworks factory the output was increased by 21 per cent. At a margarin factory, movement study of one operation reduced the number of movements by 46 per cent. and effected a time saving of 37 per cent. The main object of the institute is to make work less wasteful and easier of accomplishment, first by improvement of the methods and conditions of work, and, secondly, by the selection of work and workers according to the latter's natural abilities. This entails, on the one hand, extensive research, and, on the other, the practical application of scientific knowledge in industrial works. Research during the year embraced problems relating to colliery work, advertising, illumination, ventilation, manual and bodily movements, and tests for determining general intelligence, temperamental qualities and specific aptitudes for success in engineering, colliery, dressmaking, clerical and other occupations.

A Martyr to Roentgen Rays

At the quarterly court of the London Hospital, the president, Lord Knutsford, made a presentation to Mr. Reginald Blackall, one of the pioneer roentgen-ray workers in this country, who had joined the staff twenty-two years ago. At that time the dangers of exposure to the roentgen rays were not known. But later when they were known and one of his fellow workers lost both arms and another his life, he still stuck to his work. The result was that he lost both hands. The Carnegie Trust had placed his name on the roll of honor of the "Hero's Fund" and granted him $375 a year. The London Hospital is now granting him a pension of $1,425 and insuring his life for a substantial sum on behalf of his wife and family.

Children Bald After Roentgen-Ray Treatment of Ringworm

Cases have occurred of baldness of children who have been treated at a special institute established under the Metropolitan Hospitals Board for the roentgen-ray treatment of ringworm of the scalp. Wigs have had to be provided. The ministry of health has therefore been requested to investigate the treatment.

Fewer Physicians

Previous to the war, a considerable increase of entrants to the medical profession took place. This appears to have been mainly due to the Insurance Act, which, though objectionable in many ways, certainly has greatly increased the remuneration of the large section of the profession that practices among the poor. This increase continued through and after the war, but an extraordinarily rapid decline has set in this year. The following table shows the number of students entering in recent years:

Year		Year	
1900	1,500	1919	3,500
1910	1,500	1920	2,500
1915	2,000	1921	2,000
1916	2,000	1922	2,000
1917	2,500	1923	545
1918	2,500		

The great increase of entries led to the expression of fear by Sir Donald Macalister, in his presidential address to the General Medical Council in 1921, that danger might arise to professional education and perhaps to professional careers because of the number of entrants. The phenomenal decline in 1923 seems to be due to the belief that the profession is threatened with overcrowding. A noteworthy fact also is a great decline of women entrants. Of the 545 students entering in 1923, only about sixty, judging by Christian names, appear to be women.

The Commercial Exploitation of Birth Control

The latest phase of the birth control movement is the establishment by a layman of the "Institute of Birth Control, Limited," a commercial enterprise. Instruction in birth control is supplied by the institute to women at a fixed fee. In circulars sent to married women it is stated that "the staff of women physicians give individual advice." However, the association of registered physicians with any commercial enterprise is forbidden by the General Medical Council; this means that such physicians are liable to the penalty of being removed from the register. Dr. Cox, medical secretary of the British Medical Association, has described the enterprise as the attempt to dignify and develop a sordid business by giving it the name of "Institute for Birth Control." He is surprised and disgusted that any physician should take any share in the project. Dr. Marie Stopes, the leader of the birth control movement in this country, and physicians associated with it, also deprecate the undertaking.

PARIS

(From Our Regular Correspondent)

March 14, 1924.

A New Branch of Legal Medicine

The increasing use of scientific methods in criminal investigations has given rise to a branch of legal medicine, which has been termed "police technic." Through its widening application to problems, this new art has a tendency to become detached from its parent and to live independently since police laboratories have been created. After the study of finger prints and the analysis of all sorts of spots came the study of handwriting; now we learn of a method still little known. Dr. Edmond Locard, director of the laboratory of police technic at Lyons, has called attention to the verification of alleged alibis through the analysis of dust. Hans Gross conceived the idea of collecting dust particles from the clothing of a person to verify his identity, or to prove his occupation. It is evident that a man engaged in house wrecking would not carry the same dust in his clothing as the man who unloads flour or coal at the wharves. Nor is the dust of a drug store like that of a library. Locard points out that dust for analysis can be secured simply by brushing the clothes. The organic substances, for example, starch granules, splinters of wood, silk and wool fibers, in spite of their minuteness, are usually easy to identify. To determine the character of mineral dust, it is necessary to resort to microchemistry. Sometimes very difficult analyses are required, but the results are significant. For instance, a man states that he spent in a quarry the night on which a crime was committed. An examination of his clothes fails to discover any dust from the quarry in which he pretends to have slept, whereas it does show abundant traces of vegetable matter, which point to a barn where he fled after the crime was committed. Another instance is that of a body found by the roadside, in a limestone region. The person charged with the crime said that, at the time the crime was committed, he was walking on a different road, which was known to be strewn with rock containing silica. His clothing and shoes were brushed, and an analysis of dust thus obtained refuted his statement. A short time ago, Locard was able to prove that a person who pretended he had followed a certain road had in reality taken another. The dust from his shoes contained brick dust, and the spot was found in the road where he had tossed brick in his path to get over a defective crossing.

Locard called attention to two other tests that sometimes are useful. The first is the examination of material found under the finger nails of suspects. For example, Locard was able to establish the guilt of a burglar by finding under his nails grease which he gathered in sliding down a cable. The second test is an examination of the ear-wax, which, Dr. Icard of Marseilles pointed out, contains a great variety of dusts.

Contract Fee for Confinement Case

In the department of the Seine, a physician recently agreed to take charge of a confinement case for 1,500 francs. Later, when the physician arrived, the child had been delivered by a midwife, who received 300 francs for her services. The physician demanded 1,500 francs, and the family offered him 800 francs in settlement. A court held that the physician's fee was excessive, and that the family's offer was too low. The court fixed the fee at 1,200 francs, and justified its decision by stating that the contract price included care before and after the confinement; the physician arrived too late, but he gave the woman, before and after her confinement, the care needed, and he is entitled to the contract fee, less the sum paid the person who served in his place at the confinement.

The French Congress of Ophthalmology

The thirty-seventh congress of the Société française d'ophtalmologie will open in Paris, May 12. There will be the usual paper, by Dr. Camille Fromaget of Bordeaux, on "Ocular Affections of Dental Origin," and an address by Dr. G. E. de Schweinitz of Philadelphia. A banquet will be served, at which M. Léon Bérard, minister of public instruction, will preside.

A Memorial to Army Physicians

A tablet has been placed in the military hospital of Val-de-Grâce in memory of army medical officers who died in Morocco, the Levant, Algeria and Tunis. The ceremonies were in charge of General Gouraud, and Marshal Lyautey and M. Maginot, minister of war, were honorary chairmen. A distinguished audience was present. General Gouraud expressed his admiration for the generous spirit, skill and devotion of physicians who gave their lives in distant lands.

A Monument to Nurses

Ex-service men belonging to various national organizations have started a movement to secure funds to erect a monument in Paris to nurses who lost their lives during the war.

Personal

At its last session, the Academy of Sciences took up the election of a member in place of the late M. Arnaud de Gramont. On the first ballot, Dr. Alexander Desgrez, professor of chemistry at the Faculté de médecine of Paris, was elected. Desgrez is known by his work on the amount of urea and carbon monoxid in the blood during anesthesia, and on metabolism in the dermatoses, cancer and diabetes. He originated a simple method for regeneration of air in a closed space, which has been adopted by the British admiralty for use on submarines. During the war, he contributed to the elaboration of protective measures against war gases. In 1923, he was president of the congress of the French Association for the Advancement of Science.

Dr. C. A. M. Soret, formerly head of the roentgenologic service in the hospitals of Havre, who has undergone several operations for roentgen-ray injuries (a hand having been amputated on one occasion), has been decorated as knight of the Legion of Honor.

Deaths

Dr. Louis Sencert, professor of clinical surgery at the Faculté de médecine of Strasbourg, died recently. He carried on his professional studies at the Faculté de médecine of Nancy, becoming associate professor in 1907; after the war, he was appointed to the chair of clinical surgery in the University of Strasbourg. Since 1919, he had been corresponding member of the Academy of Medicine.

The death of Dr. Eugène Lambling, professor of organic chemistry at the Faculté de médecine of Lille, corresponding member of the Academy of Medicine, and author of a well known compendium on chemistry, has been announced.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 10, 1924.

Infant Mortality

At a special session of the Argentine Medical Association, Nov. 7, 1923, Drs. Acuña, Schweizer and Cometto submitted a report on infant mortality to the Society of Nepiology. The absolute birth rate shows a steady increase, but the relative birth rate is decreasing gradually, especially in the large cities. In 1921, there were in the country 270,776 births and 128,936 deaths. Of the deaths, 43,858 were among children under 2 years of age. Infant mortality therefore accounted for about one third of all deaths. Stillbirths represent 35 per cent. of the infant death rate. The chief factors in the high infant mortality are the ignorance of parents and a too early institution of artificial feeding, although breast feeding is not so common in our country. In the province of Buenos Aires the birth rate in 1890 was 48 for 1,000 inhabitants but in 1922 it was only 31. In every thousand live births, 118 infants die before they reach the age of 2 years. In other regions, the situation is worse, and there are communities where from 60 to 70 per cent. of the deaths are among infants.

Campaign Against Tuberculosis and Alcoholism

The president of the national public health department, Dr. G. Aráoz Alfaro, has requested the organization of a division to combat tuberculosis and alcoholism. There will therefore be established in Jujuy, La Rioja, Santiago del Estero and Salta provinces dispensaries, hospitals, sanatoriums, convalescent camps and preventoriums for children. In addition, the public assistance bureau of Buenos Aires is going to start an adoption service for children born of tuberculous mothers.

Trachoma

The report of the commission appointed by the national health commissioner points out that trachoma has spread extensively in certain areas. It recommends a strict quarantine for all trachoma cases, and compulsory treatment under government control.

Postgraduate Fellowships

The Rizzoli Institute of Bologna, Italy, has established a fellowship in orthopedics to be granted to some Argentine physician who has practiced more than three years. The selection will be made by a committee comprising the Italian minister, the dean of the medical school and the director of the Italian Hospital.

The Argentine Biologic Institute now has a two-year fellowship, named the "Prof. A. Lustig fellowship." It is intended for recently graduated physicians who want to work in biology, and it is endowed with 6,000 pesos (about $1,900).

Tribute to Güemes

Professor Güemes has been for many years the most noted clinician in Argentina. On the occasion of his retirement as professor of clinical medicine, seventy of his pupils and friends presented him with a souvenir volume.

Bacteriologic Institute

Dr. Bachmann, professor of bacteriology in the medical school, has resigned as director of the bacteriologic institute of the national public health department to accept a position with a large establishment which manufactures biologic products. His successor temporarily will be Dr. Alfredo Sordelli, chief of the division of serum therapy. Sordelli has done a great deal of original work in immunization. The Brussels Pasteur Institute recently adopted his method for the immunization of horses against diphtheria. He has

done much research in complement fixation and the preparation of insulin, and has prepared a very active antigangrene serum. He is known for his studies on oligodynamics, the Abderhalden test, the rôle of the thyroid gland in immunization, the action of insulin, the action of poisons on coagulation, the serologic diagnosis of syphilis, leprosy and tuberculosis. Through his own efforts, the serums prepared by the institute have come to be considered among the most potent in the world. Like some other investigators prominent in biology, Sordelli is not a physician. He is a chemist, but his training includes biologic chemistry, physiology, bacteriology, immunology and physics.

Personal

There is much regret over the recent death of Dr. Elena Larroque de Roffo, the wife of Dr. A. Roffo, director of the Experimental Medicine Institute. She was an efficient helpmate in studies on experimental cancer and cancer therapy.

HOLLAND

(From Our Regular Correspondent)

March 1, 1924.

Gallstones and Roentgenograms

The difficulty of securing good roentgenograms in cases of cholelithiasis has caused this procedure to be regarded as deceptive, so that it has been quite generally abandoned by practitioners. Before the Société hollandaise de gastro-entérologie, Dr. Van der Stempel disapproved giving up a technic which may not be the most trustworthy but which is a great aid in diagnosis. He referred to precautions that are necessary to secure satisfactory roentgenograms: the patient should fast; the tube should be exactly centered on the lower costal border, and above all, roentgenograms taken before and after a barium meal should be compared. He pointed out that the shadow of a calculus usually is ringlike, since the center of a stone composed of cholesterin and bile pigments is not opaque to roentgen rays, whereas the periphery, which contains calcium salts, casts a shadow on the sensitive plate. Care must be taken not to regard as stones shadows which may appear as such but which result from conditions in adjacent organs.

Dysentery and the Pasteurization of Milk

Researches undertaken by Doorebos and Mulders on the resistance of *Bacillus dysenteriae* in milk are of great importance. Cultures of *B. dysenteriae* heated to a temperature of from 50 to 60 C. are rendered absolutely sterile. It should be noted that suspensions of micro-organisms are destroyed much more rapidly in water than in milk. The Shiga-Kruse bacillus dies in one minute in water at 60 C., whereas six minutes is required to obtain the same result in milk. For the Flexner bacillus and *B. dysenteriae* Leiden the time required is, respectively, one minute and ten minutes, and one minute and twenty minutes. It is, therefore, the latter type of bacillus that is most resistant when suspended in milk. These findings are of great value in controlling the milk supply of cities.

Physical Examination Before Marriage

The campaign for legislation which would require applicants for a marriage certificate to be examined physically has resulted in the appointment of a committee which will take the necessary steps to secure such a law. Three prominent leaders comprise the committee: Professor Sleeswyk of Delft, Dr. Van Herwerden, a woman physician of Utrecht, and Dr. Vos of Amsterdam.

Outings for Children

At a conference in Utrecht, Professor Gorter of Leiden discussed the value to children of outings in the country and at the seashore. He emphasized the necessity of establishing strict medical control and of subjecting children to a careful examination to determine who will profit most from outings. The control may be exercised by the regular medical inspectors of schools or by a recognized pediatric clinic.

Children recommended for outings should be divided into two groups: (1) those who are convalescing from an acute disease and who have no chronic affection; a short outing in the country or at the seashore will usually restore these to perfect health; (2) those who have a chronic condition which only a prolonged outing can improve or cure; in this class precise indications as to the kind of treatment and the duration of the outing must be established, and the greatest care taken lest healthy children be brought in close contact with those who are diseased.

The Pasteur Fund

Under the chairmanship of Professor Van Loghem, the Nederlandsch Vereeniging Studiefonds Pasteur has been founded. Its purpose is to aid Hollanders who undertake scientific studies in a Pasteur institute at Paris or elsewhere. The funds are furnished by personal contributions and by grants from large societies. The beneficiaries are to be chosen once a year. As a rule, the allowances will not extend over more than two years. Beneficiaries must furnish the committee an annual report on their scientific researches.

Rickets

Before the Société néerlandaise de pediatrie, Professor Gorter presented an interesting communication on the pathogenesis of rickets and the combined effects of vitamins and light. In his opinion, rickets is due to a lack of vitamins which, under the influence of sunlight, produce normal ossification. These vitamins are fat-soluble, but not identical with vitamin A, and they exist in large quantities in cod liver oil. Many experimental findings corroborate this view. For example, if rats are fed on food containing phosphates and this type of vitamins, it is possible to cure rickets which was produced by food which at first contained only the phosphates. It seems that these vitamins facilitate the storage of phosphates in the animal. Another peculiar thing is that the application of light rays of 302 mm. wave-length accelerates recovery from this rachitic state. The author believes that the vitamins serve as a catalyzing agent.

MADRID

(From Our Regular Correspondent)

Feb. 21, 1924.

Insufficiency of the Liver

Dr. Oliver discussed at the Medicosurgical Academy the functional capacity of the liver. He stated that organs not endowed with a unique function may be replaced by others, and until we know definitely the function of the liver, it will be difficult to determine whether there is or is not liver insufficiency, especially as its functions are shared by other structures.

The rôle of the liver may be considered under four headings: (1) as a barrier between the outside world and the blood; (2) as an organ of internal secretion; (3) as a pigment-forming gland associated with the spleen and the rest of the reticulo-endothelial system, and (4) as a secreting gland involved in digestion, absorption and elimination. Its storing power is related to the analogous rôle of the bowel. Therefore, in trying to determine the blood content of a product given by mouth, there is always the unknown factor represented by the quantity remaining in the intestine. This has compelled the use of intravenous injections to determine the proportion of carbohydrates retained by the liver.

It is well known that carbohydrate metabolism is influenced by the endocrine glands. There is some doubt as to the rôle of the pituitary, but no question as to the influence of the suprarenal glands. A patient with suprarenal deficiency shows a special curve of the blood sugar, following the injection of epinephrin. Dr. Oliver believes this test is the best diagnostic means in cases of suspected suprarenal deficiency. The liver shows specificity toward protein. As regards fats and other lipoids, it is hard to assume any influence on the part of the liver, since fats are mostly absorbed by the lymph vessels, and, when reaching the liver, they have already traversed structures having a marked lipopexic as well as lipolytic power. Dr. Oliver is doubtful regarding the digestive hemolysis test. Widal says that if a fasting subject having liver insufficiency takes a certain amount of protein, leukopenia will result; but it is a fact that the amount of formed blood elements, especially in the capillaries, depends on the distribution as well as on the quantity of these elements. Vasomotor reactions may change both.

It has been shown recently that digestion causes the occurrence of such vasomotor reactions, perhaps through a reflex action which changes both quantity and quality of the blood in the abdomen and the skin, specially in vagotonia. Dr. Oliver has seen a typical digestive hemolysis in a patient apparently without vagotonia by just inserting a duodenal tube, without giving the liver a chance to exert its efforts. As regards the endocrine function of the liver, he recalled Cannon and Uridil's work (1922) showing that the liver elaborates and discharges into the blood some products that increase heart beats and blood pressure. As regards bile formation, Whipple showed that all tissues had a share in the metabolism of the pyrrols. There is no question as to the liver sharing with the intestine its functions of digestion, absorption and elimination. Although the studies of the metabolism of water and salts in the liver are promising, so far they have no practical clinical application.

Dr. Rodriguez Mata stated that Dr. Oliver was a pessimist, and his paper had more theoretical than practical value. In the utilization of carbohydrates we must consider the quantitative aspect of the function performed by each tissue, the different ability of muscles and liver to store sugar, and the difference in the pathologic changes. Therefore, by combining clinical with pathologic evidence, a defect in the storing of levulose or galactose may be attributed to liver changes instead of to muscular alterations. Dr. Carrasco Cadenas stated that there are many liver function tests having a proved diagnostic value. They are not absolute, as with most medical science signs and tests, but they have a relative value, especially when their results agree. The liver fulfils many purposes, and the different functions must be studied separately.

Surgery in Prehomeric Greece

Dr. Goyanes, director of the Spanish Institute of Cancer, in a lecture on prehomeric surgery before the National Academy of Medicine, stated that we know more now as to the culture of the belligerents in the siege of Troy than did the poet 400 years after the event. Dr. Goyanes stated that prehomeric surgery, as well as medicine, had its source in popular healing, being a true therapeutic folklore. In Homer's works, more than 130 different wounds and injuries are described. This shows that Homer, perhaps through observation of animals slaughtered and war happenings, had secured a knowledge of anatomy, and even physiology, little short of wonderful. In most cases wounds were washed with warm water, and a sedative lotion was applied afterward. There is only one reference to a dressing held in place by a sling cord. A soldier is described as pierced through the heart by a spear; this breaks and the wounded man keeps on talking until another soldier pulls out the broken piece, when death takes place immediately. Another man is injured in the brain stem and falls, his face touching the ground before either the hands or knees. Dr. Goyanes called attention to the high regard in which Machaon, the first military surgeon, was held by Agamemnon, who made him climb on his chariot, saying that, if a physician was worth ten men, a surgeon was worth ten soldiers. Goyanes described culture in the bronze age, and invited attention to the fact that modern archeologic investigations in Troy had a special interest for physicians, as this was the only occasion when Virchow actually practiced medicine. There was no physician with the exploring party, and although the pathologist had never practiced before, he was compelled to follow in the footsteps of Nestor and Machaon.

BERLIN

(From Our Regular Correspondent)

March 15, 1924.

The Conflict with the Berlin Health Insurance Societies

At a meeting, March 6, the following matter concerning physicians and health insurance societies was brought before the federal committee designated to settle such difficulties:

> The federal committee, the legal successor of the executive committee established by the Berlin Agreement, is requested to give an opinion as to whether physicians in accordance with the interpretation of the law by the federal minister of labor are under obligations to serve the health insurance societies under the old contracts; whether the health insurance societies are obliged to accept their services, and whether both are obliged to meet and draft a new contract.

The federal committee expressed the view that the opinion delivered by the minister of labor was sound. There is now no doubt that the Berlin health insurance societies were under obligations to accept the medical profession's offer of January 21, and that a change can be brought about only through an appeal to the bureau of arbitration.

At the request of the Aerztliche Vertragsgemeinschaft, the court has issued the following temporary injunction:

> The opponents of the order (the league of health insurance societies of Greater Berlin, the league of industrial health insurance societies, and the Berlin Association of Panel Physicians) are hereby prohibited, on pain of fine or imprisonment, to state in leaflets or any other form of announcement intended for the public or for the insured themselves, that panel physicians have broken their contract with the health insurance societies, or that they have made an offer to the *Krankenkassen* to restore previous contract relations for two weeks and then gradually to abolish the unrestricted free choice of physicians.

The Working Day in Hospitals

The government issued the following order, Feb. 13, 1924, concerning the working day in hospitals:

The care-taking personnel in hospitals may be employed up to sixty hours a week. The working day shall, as a rule, not exceed ten hours, and suitable intermissions must be provided. The order applies to institutions, public or private, in which there are patients who need constant medical supervision, and to maternity hospitals, homes for infants, and psychopathic institutions. The personnel, within the meaning of this order, includes persons in a working or teaching capacity, who perform chiefly care-taking work, work of a domestic nature, or work of any kind that is immediately concerned with patients. The minister of labor shall determine what work in federal institutions is to be considered care-taking. In nonfederal institutions, the chief administrative bodies shall decide.

Persons employed in care-taking institutions recognized by provincial authorities as contributing to public welfare come within the application of this order. The management of institutions shall regulate the working hours and periods of rest, after consulting the director and heads of departments. The time schedule shall be posted in a conspicuous place.

The limitations of hours in this order do not apply to work that, in emergencies, must be performed without delay. The execution of this order, as far as federal institutions are concerned, shall be in the hands of the minister of labor; and for other institutions public health or industrial boards shall be appointed by provincial authorities. The minister of labor may transfer the execution of this order to special boards of control placed over federal institutions. The provincial authorities also may appoint boards of control.

The minister of labor may issue explanatory statements, rulings as to what institutions are affected, what institutions contribute to public welfare, and what shall constitute care-taking work. The execution of this order in institutions under the ministry of national defense, military hospitals, for example, shall be in the hands of the minister of national defense. The general principles of this order in all cases, however, shall be carried out as far as posible.

This order has aroused the personnel in various institutions to protest against it on the ground that it violates the principle of the eight-hour day.

State Control of Masseurs

A few years ago, Prussia introduced state certification of nurses and care-taking personnel, on the basis of an examination. Now the order has been applied to masseurs. Uncertified masseurs are not prohibited from following their calling, but only those approved by the state may designate themselves masseurs and thus enjoy the prestige that certification brings. Candidates are examined at schools of instruction that have been approved by the state. The examining board consists of three physicians, one a public health officer, the others specialists in massage and physiotherapy, one of whom must be a teacher in a masseurs training school. Candidates must be more than 20 years of age and furnish evidence of moral character, physical and mental fitness, and six months' continuous training in a state school for masseurs or one approved by the state. The examination is mainly practical. The oral examination comprises the anatomy and physiology of the body, the theories of disease, of massage and of hot air and warm applications, professional theory, and a practical test in therapeutic gymnastics, manual massage and apparatus and devices employed. A certificate may be revoked if the holder proves unreliable or acts contrary to state regulations.

The Celebration of Aufrecht's Eightieth Birthday Anniversary

Professor Aufrecht, for many years director of the department of internal diseases in the Altstadt municipal hospital at Magdeburg, celebrated his eightieth birthday, March 13. He had held that position for forty years, when he resigned in 1906. At the age of 70, he gave up medical practice, but continued scientific research. Aufrecht has published a large number of articles in various fields of internal medicine; among others are treatises on the pathology and treatment of pulmonary diseases, and the diagnosis and treatment of pleurisy, empyema, tuberculosis and pneumonia. His experience in this field is presented in Nothnagel's Handbook under "Die Klinik der Lungenentzündungen." He was among the first to advocate the use of quinin in pneumonia and salicylic acid in pleurisy. He made a number of researches in heart and blood vessel affections and kidney disease. "Die Pathologie und Therapie der diffusen Nephritiden" gives evidence of his broad clinical experience and of his ability in research. He published also treatises on the clinical aspects of gallstone formation, cirrhosis of the liver, appendicitis and ileus. His later years have been devoted largely to bacteriologic research on the diagnosis and treatment of cholera, cerebrospinal meningitis and the "common cold" and its relation to other diseases.

Marriages

WILLIAM A. BRYANT to Miss Daisy L. Mortimer, both of Casper, Wyo., at Kansas City, Mo., recently.

THEODORE WELLINGTON CORWIN to Mrs. Gertrude Cadmus Richman, both of Newark, N. J., March 1.

FRANK MONTGOMERY WILSON to Miss Inez MacDonnell, both of Los Angeles, March 22.

THOMAS P. CLIFFORD, Detroit, to Miss Emma McCleary of Amsterdam, N. Y., March 3.

GEORGE LEROY PINNEY, Hastings, Neb., to Miss Sarah E. Boone of Chicago, recently.

RALPH WALDO TRIMMER to Miss Elizabeth Roberts, both of Oak Park, Ill., April 2.

Deaths

Bayard Taylor Holmes, Sr. ● Chicago; Chicago Homeopathic Medical College, 1885; Chicago Medical College, 1888; formerly professor of surgery, University of Illinois College of Medicine, Chicago, and the Chicago Medical College, and on the staff of the Cook County Hospital; author of several works on surgery and on insanity; aged 71; died, April 1, at his winter home in Fairhope, Ala., of heart disease.

George Henderson Lee ● Galveston, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1888; professor of obstetrics and gynecology at the University of Texas Department of Medicine, Galveston; on the staffs of the John Sealy Hospital and St. Mary's Infirmary; aged 62; died, March 21, of edema of the lungs and heart disease.

Philip Castleman ● Boston; George Washington University Medical School, Washington, 1911; formerly instructor of bacteriology at the Medical School of Harvard University, Boston; served in the Indian Medical Service; deputy health commissioner; on the staff of the Beth Israel Hospital; aged 41; died, March 31, of injuries received in an automobile accident.

Horace G. McCormick ● Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1874; past president of the Medical Society of the State of Pennsylvania, first president of the state board of medical examiners; on the staff of the Williamsport Hospital; aged 73; died, March 28, of senility.

George Stuart Willis ● New York; New York Homeopathic Medical College and Hospital, New York, 1899; served in the M. C., U. S. Army, during the World War; on the staff of the New York Post-Graduate Medical School and Hospital; aged 48; died suddenly, March 24, of heart disease.

Jacob W. Bolotin ● Chicago; Chicago College of Medicine and Surgery, 1912; formerly instructor of physical diagnosis at his alma mater and on the staffs of the Livingston County Sanitarium, Pontiac, and the La Salle County Tuberculosis Sanitarium, Ottawa; aged 36; died, April 1.

Henry Gray, Prairie Hill, Mo.; Northwestern Medical College, St. Joseph, 1890; University of Louisville (Ky.) Medical Department, 1893; member of the Missouri State Medical Association; aged 63; died, March 16, at the Woodland Hospital, Moberly, following a long illness.

Janet Gunn, Decatur, Ill.; Northwestern University Woman's Medical School, Chicago, 1889; for fifteen years director of the Arlington Heights (Ill.) Sanitarium, and at one time on the staff of the Mary Thompson Hospital, Chicago; aged 68; died, April 1.

Maria Blair Maver, Chicago; Rush Medical College, Chicago, 1906; associated with Dr. Howard T. Ricketts in his work on Rocky Mountain spotted fever; aged 60; died, April 1, at the Presbyterian Hospital, of hyperthyroidism and bronchopneumonia.

Robert William Monk, Neillsville, Wis.; Northwestern University Medical School, Chicago, 1894; member of the State Medical Society of Wisconsin; formerly state senator, and mayor of Chilton; aged 57; died, March 17, of anemia.

Merrill Neville Smith ● Fayette, Mo.; Washington University Medical School, St. Louis, 1912; served in the M. C., U. S. Army, during the World War; aged 40; died, March 16, at the Jewish Hospital, St. Louis, following an operation.

Francis Edward Cullen, St. Louis; St. Louis University School of Medicine, St. Louis, 1921; city physician; formerly on the staff of the City Hospital; superintendent of the Isolation Hospital; aged 29; died, March 12, of septicemia.

John Marvin Ratliff, Richlands, Va.; Medical College of Virginia, Richmond, 1917; served in the M. C., U. S. Army, in France, during the World War; on the staff of the Mattie Williams' Hospital; aged 28, died, March 10, of pneumonia.

Sarah Stockton ✠ Indianapolis; Woman's Medical College of Pennsylvania, Philadelphia, 1882; for twenty-five years on the staff of the Central Indiana Hospital for the Insane, where she died, March 14, of heart disease, aged 82.

Clarence E. Spicer, Titusville, Pa.; Eclectic Medical Institute, Cincinnati, 1884; member of the Medical Society of the State of Pennsylvania; member of the board of health; aged 68; died, January 28, of cerebral hemorrhage.

John C. Nelson, St. Paul; College of Physicians and Surgeons, Keokuk, Iowa, 1879; also a pharmacist; Danish vice consul for twenty-eight years; formerly county coroner; aged 77; died, March 13, of arteriosclerosis.

George Spalatin Easterday, Watsonville, Calif.; Eclectic Medical Institute, Cincinnati, 1878; member of the California Medical Association; president of the Fruit Growers' National Bank; aged 75; died, March 10, of senility.

W. Walter Tison, Cedartown, Ga.; College of Physicians and Surgeons, Baltimore, 1893; member of the Medical Association of Georgia; aged 53; died, March 23, of food poisoning and atrophic cirrhosis of the liver.

Peter Arthur Haley ✠ Charleston, W. Va.; University College of Medicine, Richmond, Va., 1899; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 49; died, February 28, of pneumonia.

Augustus Ward Roff, New York; Columbia University College of Physicians and Surgeons, New York, 1898; formerly on the staff of the Mount Sinai Hospital; aged 51; died, March 11, of cerebral hemorrhage.

George Haywood Sandifer, Abilene, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1897; member of the state board of medical examiners; aged 53; died, February 14, of carcinoma.

Leonard Keplinger, Waxahachie, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1895; member of the State Medical Association of Texas; aged 61; died, March 16, of heart disease.

Thomas William O'Reilly ✠ Los Angeles; Jefferson Medical College of Philadelphia, 1892; veteran of the Spanish-American and World wars; aged 54; died, March 20, of a self-inflicted bullet wound.

Crawford Douglass Beasley, Brooklyn; Long Island College Hospital, Brooklyn, 1879; member of the Medical Society of the State of New York; died, March 13, of injuries received in an automobile accident.

William F. Malone ✠ Milwaukee; College of Physicians and Surgeons, Chicago, 1888; founder of the Hanover Hospital, where he died, March 25, of cerebral hemorrhage while performing an operation.

Henry B. Gourlay, Vancouver, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1906; on the staff of the Vancouver General Hospital; aged 49; died, March 12, of pneumonia.

James M. Batcheller ✠ Portland, Ore.; Willamette University Medical Department, Salem, 1893; aged 59; died, March 6, at St. Vincent's Hospital, of a skull fracture received in a fall from an automobile.

George Henry Philip Cole, Washington, D. C.; College of Physicians and Surgeons, Baltimore, 1879; formerly president of the State Bank of Commerce of Hendersonville; aged 68; died, March 8.

William W. Hanes, Mount Morris, Ill.; Physio-Medical Institute, Cincinnati, 1883; member of the Illinois State Medical Society; formerly county coroner; aged 63; died, March 11, of jaundice.

Julius Charles Dickinson, La Jolla, Calif.; University of Michigan Medical School, Ann Arbor, 1866; Civil War veteran; formerly a practitioner in Detroit; aged 80; died, March 9, of senility.

Robert Washington Clark ✠ Pittsburgh; University of Michigan Medical School, Ann Arbor, 1871; aged 76; died, February 26, at the Western Pennsylvania Hospital, of pneumonia, following an operation.

George A. Morrison, Poteau, Okla.; Drake University College of Medicine, Des Moines, Iowa, 1888; member of the Oklahoma State Medical Association; aged 71; died in March, of senility.

John McGillawee, Kitchener, Ont., Canada; University of Toronto Faculty of Medicine, 1888; for twenty-six years city health officer; aged 60; died, February 13, at the Kitchener General Hospital.

Edward W. Watkins, Ellijay, Ga.; Eclectic Medical Institute, Cincinnati, 1867; formerly member of the state legislature; Civil War veteran; aged 84; died suddenly, March 9, of heart disease.

Herbert S. Guthrie, Louisville, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, 1902, aged 44; died, March 18, of heart disease and diabetes mellitus.

Park Potts Breneman ✠ Lancaster, Pa.; University of Pennsylvania School of Medicine, 1884; formerly on the staff of St. Joseph's Hospital; aged 64; died suddenly, March 23, in his office.

Ivan Arthur Parry, Seattle; University of Illinois College of Medicine, Chicago, 1901; member of the Washington State Medical Association; aged 47; died, March 18, in Auckland, New Zealand.

William Henry Phillips, Wayne, Neb.; Sioux City (Iowa) College of Medicine, 1899; served in the M. C., U. S. Army, during the World War; aged 53; died, March 13, following a long illness.

Joseph Beach Chapman, Pontiac, Mich.; Detroit College of Medicine and Surgery, 1906; aged 42; died, March 14, at the Harper Hospital, Detroit, following an operation for abscess of the liver.

David Richard Evans ✠ Pittsburgh; Western Pennsylvania Medical College, 1899; served in the M. C., U. S. Army, during the World War; aged 49; died, March 10, of pneumonia.

Charles Whitehead, Newaygo, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1890; aged 58; died recently, of pneumonia, on the S. S. *Athenia*, en route from Liverpool.

William H. Eblen, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1905; member of the Tennessee State Medical Association; aged 50; was shot and killed, March 17.

John R. Fleming, Atlantic City, N. J.; Hahnemann Medical College of Philadelphia, 1882; formerly member of the city council; aged 64; died, March 21, following a long illness.

Max Guggenheim, West New York, N. J.; University of Wurzburg, Germany, 1887; aged 66; died, March 1, at the North Hudson Hospital, Weehawken, of heart disease.

John Newton Primm, Hannibal, Mo.; Hahnemann Medical College and Hospital, Chicago, 1881; aged 70; died, March 18, of injuries received when struck by an automobile.

Julia Gould Waylan, Wernersville, Pa.; New York Medical College and Hospital for Women, New York, 1894; aged 67; died recently, of uremia, following an operation.

Cassius Clay Hogg, Huntington, W. Va.; Medical College of Ohio, Cincinnati, 1891; Spanish-American War veteran; aged 57; died, March 16, of tuberculosis.

John Philip Schilling, Canton, Ohio; Starling Medical College, Columbus, 1864; also a druggist; Civil War veteran; aged 83; died, March 15, of pneumonia.

Charles Benton Throckmorton, Canonsburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1896; aged 54; died, March 19, following a long illness.

Harry McNeal, Fordoche, La.; University of Michigan Medical School, Ann Arbor, 1900; aged 67; died, March 3, at Ann Arbor, Mich., of myocarditis.

Hugh Dyer Barnes, Arlington, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1902; aged 58; died, March 11.

Joseph Atkinson, Arcadia, La.; University of Alabama School of Medicine, Tuscaloosa, 1872; Confederate veteran; aged 84; died, March 10, of senility.

John M. Rhodes, Columbus, Ohio; Columbus Medical College, 1888; Civil War veteran; aged 82; died, February 12, at the Grant Hospital, of senility.

Lemuel A. Wilmot McAlpine, St. John, N. B., Canada; Medical Department of the University of the City of New York, 1887; aged 64; died recently.

Edgar O. Dutro, Hood River, Ore.; St. Louis (Mo.) College of Physicians and Surgeons, 1892; aged 54; died, March 11, of internal hemorrhage.

Albert Lawrence Gnichtel ✠ New York; Medical Department of Columbia College, New York, 1891; aged 59; died, March 17, of tuberculosis.

Gay Amasa Jones, Huron, N. Y.; Medical Department of the University of the City of New York, 1898; aged 47; died, March 9, of pneumonia.

Scipio Person Wright, Salisbury, N. C.; Leonard Medical School, Raleigh, N. C., 1893; aged 56; died, March 1, of carcinoma of the tongue.

William C. Holmes, Trenton, Texas; New Orleans (La.) School of Medicine, 1867; Civil War veteran; aged 83; died, March 8, of pneumonia.

George W. Clendenen, Fulton, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1894; aged 79; died, March 11, of senility.

Leopold Frankel ✠ Chicago; University of Budapest, Hungary, 1893; aged 54; died, April 2, at St. Joseph's Hospital, of pneumonia.

Henry B. Melvin, Halifax, Va.; Medical College of Virginia, Richmond, 1862; Civil War veteran; aged 84; died, March 9, of senility.

James Monroe Maurer ✠ Shamokin, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1887; aged 61; died, March 11.

Marion S. Middlekamp ✠ Pueblo, Colo.; Beaumont Hospital Medical College, St. Louis, 1900; county coroner; aged 49; died, March 12.

William Watson Jones ✠ North East, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1878; aged 72; died, March 19.

George Evans Reading ✠ Woodbury, N. J.; Jefferson Medical College of Philadelphia, 1885; aged 60; died, February 23, of pneumonia.

John McCrystle, Minersville, Pa.; Jefferson Medical College of Philadelphia, 1875; aged 69; died, March 15, of cerebral hemorrhage.

John Ray Geddis Allison ✠ Millheim, Pa.; Jefferson Medical College of Philadelphia, 1884; aged 67; died, March 21, of heart disease.

Andrew J. Krehbiel, Dayton, Ohio; Cleveland University of Medicine and Surgery, 1871; aged 74; died, March 13, of heart disease.

Herbert A. Squire ✠ Los Angeles; Medical Department of the University of the City of New York, 1886; aged 63; died, March 16.

Joseph R. Redman, Reno, Nev.; American Medical College, St. Louis, 1888; aged 78; died, March 8, at San Francisco, of pneumonia.

Aaron A. Eikenberry, Indianapolis; Medical College of Indiana, Indianapolis, 1885; died, March 11, of cerebral hemorrhage.

Irvine J. Kerr ✠ Cleveland; College of Physicians and Surgeons, Chicago, 1893; aged 56; died, March 17, of pneumonia.

John G. Hutton, Durham, Ont., Canada; Victoria University Medical Department, Toronto, 1888; aged 65; died in February.

Sarah H. Brayton ✠ Evanston, Ill.; New York Free Medical College for Women, New York, 1875; aged 70; died, April 4.

Brayton A. Martin, Mount Victory, Ohio; Starling Medical College, Columbus, 1869; aged 88; died, March 8, of senility.

Fred Eugene Aldrich, Chestertown, N. Y.; Dartmouth Medical School, Hanover, N. H., 1879; aged 76; died, March 10.

Henry Lindlahr, Chicago; National Medical University, Chicago, 1904; aged 62; died, March 26, of pneumonia.

Edward James Kelley ✠ Milwaukee; Rush Medical College, Chicago, 1890; aged 71; died, March 9, of senility.

John A. Moore, Westport, Conn.; Albany (N. Y.) Medical College, 1880; aged 69; died, January 12.

Roscoe C. Harrison, Kimball, W. Va. (licensed, West Virginia, 1904); aged 44; died recently.

Frank J. Erwin, Blairsville, Ga.; Atlanta Medical College, 1884; aged 67; died, March 14.

Hastings D. Avery, Tyro, Ark. (licensed, Arkansas, 1903), aged 65; died, March 12.

The Propaganda for Reform

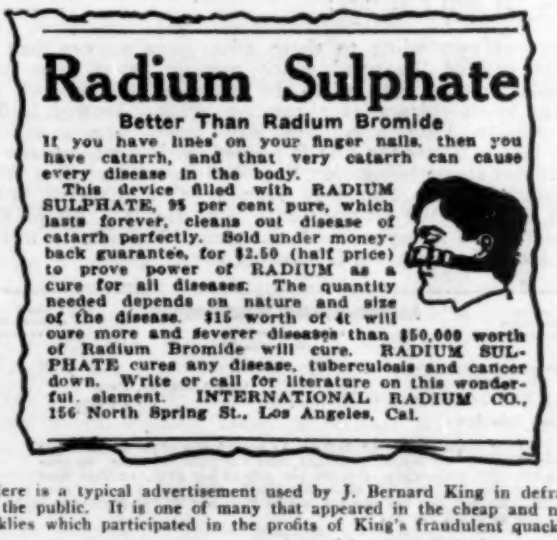
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

J. BERNARD KING'S RADIUM FRAUD

The International Radium Company and Radium Products Company Is Barred from the Use of the United States Mails

For some years one J. Bernard King has been defrauding the public by selling earth as a cure for all the ills of the flesh under the claim that it was a radium salt. On Feb. 6, 1924, a quietus was put on King's scheme through the issuance of a fraud order debarring him from the use of the United States mails, not only under his own name, but under the name of the "International Radium Company" and "Radium Products Company."

In August, 1918, J. Bernard King, who was then quacking it in Cincinnati, sent to the Propaganda Department what he described as "a full size sample of a real tuberculosis cure." The alleged cure, apparently, consisted of some kind of soil


Radium Sulphate
Better Than Radium Bromide
If you have lines on your finger nails, then you have catarrh, and that very catarrh can cause every disease in the body.
This device filled with RADIUM SULPHATE, 95 per cent pure, which lasts forever, cleans out disease of catarrh perfectly. Sold under money-back guarantee, for $2.50 (half price) to prove power of RADIUM as a cure for all diseases. The quantity needed depends on nature and size of the disease. $15 worth of it will cure more and severer diseases than $50,000 worth of Radium Bromide will cure. RADIUM SULPHATE cures any disease, tuberculosis and cancer down. Write or call for literature on this wonderful element. INTERNATIONAL RADIUM CO., 156 North Spring St., Los Angeles, Cal.

Here is a typical advertisement used by J. Bernard King in defrauding the public. It is one of many that appeared in the cheap and nasty weeklies which participated in the profits of King's fraudulent quackery.

or earth done up in a quilted pad. King declared that the substance comprising the pad was "a new radium" which he was calling "Ray-Cura." He insisted that while it was strongly radio-active its use was entirely without danger. As King put it: "It is as harmless as a gentle zephyr blowing over a sweet-scented flower garden." The director of the Propaganda Department, to whom King wrote personally, was told that a pad like the one that was sent would be "only $50 to doctors" but that "if you can truthfully report it as a genuine cure, it will be free to you." King added as an afterthought that the specimen that he was sending had already "cured three patients."

A month later, in September, 1918, J. Bernard King was prosecuted in Cincinnati for the illegal practice of medicine and was reported to have been fined $100 and sentenced to thirty days in jail. King then went to Philadelphia, but apparently not finding the East as responsive to his blandishments as he would wish, he transferred his operations to Los Angeles where he continued exploiting the fraud until the federal authorities debarred him from the use of the mails.

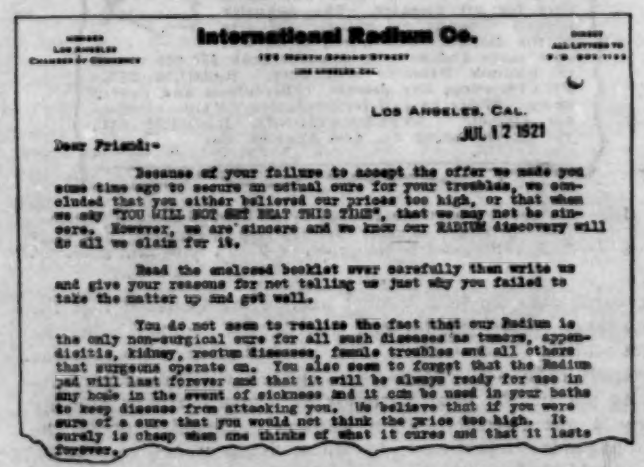
While in Los Angeles, King has advertised in the cheap weeklies that offer such a welcome haven of quacks and medical fakes and fads. King did business mainly under the name of the "International Radium Company" at 156 N. Spring St., Los Angeles. His letterheads declared that he was a "member of the Los Angeles Chamber of Commerce."

On Jan. 18, 1924, King was called on to show cause why a fraud order should not be issued against him and against the "International Radium Company" and the "Radium Products Company" which were trade names under which he operated. To quote from the memorandum to the Postmaster-General made by Judge Edgar M. Blessing, Solicitor of the Post Office Department recommending the issuance of the fraud order:

"The Radium Products Company and International Radium Company are trade names used by Mr. King, who is an elderly man and very deaf. He is not a physician, druggist or chemist, but claims to have considerable knowledge along the lines of medicine. He affixes to his name the letters Sc.D. but refuses to state from what institution, if any, he received the degree. He calls his product 'Ray-Cura' and claims that it consists of radium sulphate found 'in the mountains of North America' and that 'all other remedies are artificial, the works of man.' 'Ray-Cura' is marketed in the shape of cloth covered pads, which are composed of little sacks filled with a light-colored substance of the consistency of flour. The alleged curative power exists in what Mr. King calls radium emanations from this substance. These emanations it is stated penetrate to all diseased portions of the body and kill the germs."

The memorandum then quotes a typical advertisement of King's, essentially similar to the one reproduced with this article. It then continues:

"Persons responding to these advertisements are sent a booklet entitled 'RADIUM,' which contains many false and fraudulent claims both as to the nature of the product, as well as to its efficacy as a curative agent. Another leaflet used by Mr. King is entitled 'Ray-Cura Therapy, A Gift From God.' Below the title is printed, with what appears to be a rubber stamp impression, the following: 'Since This Was Printed We Have Found A Way To Cure Catarrh With Ray-Cura And We Guarantee It Will Do It.' All of the literature used is replete with unwarranted claims to which more specific reference will be made later.



International Radium Co.

LOS ANGELES, CAL.

JUL 12 1921

Dear Friend:-

Because of your failure to accept the offer we made you some time ago to secure an actual cure for your troubles, we concluded that you either believed our prices too high, or that when we say "YOU WILL NOT GET BEAT THIS TIME", that we may not be sincere. However, we are sincere and we know our RADIUM discovery will do all we claim for it.

Read the enclosed booklet over carefully then write us and give your reasons for not telling us just why you failed to take the matter up and get well.

You do not seem to realize the fact that our Radium is the only non-surgical cure for all such diseases as tumors, appendicitis, kidney, rectum diseases, female troubles and all others that surgeons operate on. You also seem to forget that the Radium pad will last forever and that it will be always ready for use in any home in the event of sickness and it can be used in your baths to keep disease from attacking you. We believe that if you were sure of a cure that you would not think the price too high. It surely is cheap when one thinks of what it cures and that it lasts forever.

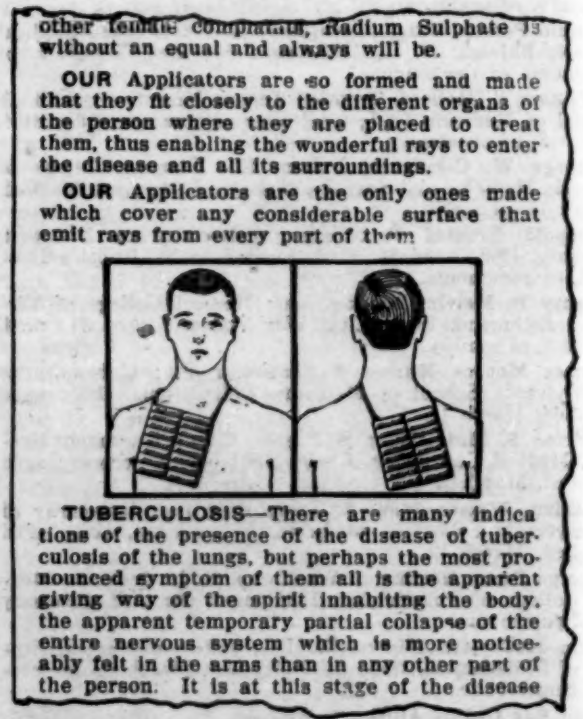
Photographic reproduction (greatly reduced) of a letter sent out by King as a part of his follow-up mail-order paraphernalia. Notice that on his letterhead King claimed that the "International Radium Company," which the Government now declares to have been an utter fraud, was a member of the Los Angeles Chamber of Commerce.

"Mr. King has furnished an analysis of his product which he alleges was made by Mr. G. M. Teller, a Chicago chemist, which he states is almost identical with his formula. This analysis is as follows:

"Carbonate of Lime	5.26 Per cent.
"Sulphate of Lime (Calcium Sulphate)	69.12 Per cent.
"Oxides of Iron and Aluminum	1.00 Per cent.
"Carbonate of Magnesia	.55 Per cent.
"Sand and clay (Silica)	4.88 Per cent.
"Moisture	18.84 Per cent.
	"99.95 Per cent."

The memorandum brings out further that King admitted to the Post Office inspectors that he obtained the substance used in his pads from a place in Nevada and that he paid $5.50 a hundred pounds for the earth that he had shipped to him. Adding the parcel post rate to this, it was learned that it cost King approximately 9½ cents a pound for the material that he used for his pads. The memorandum adds:

"The pads sold by Mr. King for $15 weigh nine ounces, hence the actual cost of the mineral content of the pad is approximately five and one-third cents."



other remedies compounded, Radium Sulphate is without an equal and always will be.

OUR Applicators are so formed and made that they fit closely to the different organs of the person where they are placed to treat them, thus enabling the wonderful rays to enter the disease and all its surroundings.

OUR Applicators are the only ones made which cover any considerable surface that emit rays from every part of them

TUBERCULOSIS—There are many indications of the presence of the disease of tuberculosis of the lungs, but perhaps the most pronounced symptom of them all is the apparent giving way of the spirit inhabiting the body, the apparent temporary partial collapse of the entire nervous system which is more noticeably felt in the arms than in any other part of the person. It is at this stage of the disease

Part of a page torn from a booklet sent out by King. This shows the so-called radium pads in position. The pads were sold at prices varying from $50 to $15. The actual cost of the contents was under 6 cents.

We are then given a list of the various diseases for which King recommended his "Ray-Cura." The list is too long to quote, but it contained such conditions as locomotor ataxia, appendicitis, tuberculosis, nephritis, diphtheria, epilepsy and cancer. Quoting again:

"In his advertisements Mr. King claims that his pads contain radium 95 per cent. pure, and the device for the cure of catarrh is sold for $2.50. The evidence shows that radium bromid is worth approximately $120,000 per gram. It is therefore apparent that $2.50 would not purchase 95 per cent. pure radium in sufficient quantities to produce any therapeutic effect. It is shown also by the evidence that radium as such is not an article of commerce except in the form of compounds. Furthermore if radium of the percentage claimed, or even one of the salts of radium were applied to any part of the human body for only half of the time required by Mr. King's 'directions' the person would be severely injured. It is, therefore, clear that the substance in question does not contain any measurable amount of radium."

The government brought out the fact that King's product was not even radio-active and gave, of course, no radium emanations. In view of the evidence, Judge Blessing in his report to the Postmaster-General stated that the conviction could not be avoided that J. Bernard King was knowingly using the mails in a scheme to defraud and on the basis of this recommended the issuance of a fraud order. As already stated, the order went into effect Feb. 6, 1924.

Protecting Health of Mothers and Children.—An important part in the protection of the health of mothers and infants lies in the control of communicable diseases—especially venereal diseases—the provision of safe water and milk supplies, adequate methods of sewage disposal, and a generally healthful environment.—W. S. Draper: *Public Health Rep.* **38**:2716 (Nov. 16) 1923.

Correspondence

NORWEGIAN HOSPITALS

To the Editor:—New hospital decorations at Ullevaal, the Christiania community sickhouse, are much brighter than the old ones. I went through the wards for infectious diseases the other day with Dr. Ustvedt, who explained that the present colors were used partly as an experiment and to get away from the more drab colors previously used. The walls had been yellow and tan before. Now the rooms are in light blue and gray. The curtains are blue. The doors are white. The beds, chairs and medicine tables are white-enameled. A warm, cheery aspect is afforded by broad-striped, bright-red and white bed-covers, table cloths, and the garments worn by ambulant patients. In spite of the gray weather outside and the deep snow seen through the big windows, the rooms were strikingly pleasant, and so were most of the patients.

Several English physicians, visiting a few days in Christiania from London, remarked to me about the detailed cleanliness of even the older wards here. It is true that this Norwegian public hospital is cleaner than many private hospitals I have seen.

An innovation in the form of a balcony for visitors to the contagious hospital buildings was pointed out to me. There is a balcony at each of the ground and second floors, around the outside of the buildings, where relatives and friends may stand and see and talk with patients inside, through the windows. Visitors come in all kinds of weather. One of the English physicians expressed his opinion that it was "perhaps all right, but quite a bit inconvenient."

ALBERT S. WELCH, M.D., Norway.

PRUSSIAN OBSTETRICS IN THE SEVENTEENTH CENTURY

To the Editor:—Following is an extract from an old manuscript in the Royal Library of Berlin of one Johann Dietz, surgeon in the army of the Great Elector and barber to the royal court, circa A. D. 1679:

The womenfolk said: "Master Dietz, we could not save him; your child is dead; and if you wish to save your wife's life you must send for Master Dorn who removes the embryo." I was greatly shocked and did not know what to do. Nevertheless I made up my mind and said: "If it is only a question of being able and willing to do what Dorn can do, that I can do also." I laid my hand on my wife and sought by exploration to discover how the foetus lay. It was situated with left arm and armpit the wrong way round. And on account of the wind which is always found in dead children, it was impossible to turn or move it. Already the midwives had almost torn the arm off. I took a small sharp knife, adapted to this purpose, in my right hand, under my forefinger, having previously made all slippery with warm oil and beer, and therewith forced my way over the foetus and opened the breast and abdomen. Thus the wind escaped and the foetus, having shrunken, was easily removed.

J. R. CLEMENS, M.D., Webster Groves, Mo.

WHAT IS THE MATTER WITH "FULL TIME"?

To the Editor:—One often hears the query, "What is the matter with 'full time'"? Let us speak in parables. There was once a town called X. In that town there lived an eminent citizen engaged in professional work who was in receipt of an income of $50,000. He was also the head of a local museum of art containing some beautiful objects. The representatives of the wealthiest citizen of the town approached him and said, "Your knowledge of art is supreme. You have devoted much of your life to its cause. If you will become 'full-time' director we will give you a salary of $10,000 a year and to your institution $1,000,000; otherwise, not one cent."

"Full time" never made Boerhaave or Friedrich Müller or Halsted, the great Johns Hopkins surgeon. It was the spirit that was in them.

I know a man, a professor of physiologic chemistry in receipt of a small salary, who declined an entirely ethical offer of $500 to make an analysis of a food product, which it would have taken him a few hours to accomplish, on the ground that such work would distract his attention from more important matters. No rules, regulations or red tape bound him to refuse this offer. *It was the spirit of the man.*

I honor Mr. Rockefeller, Jr., with all my heart. He has done great things for medicine. But I truly believe that the adoption by his agents of a plan through which the influence of the largest fortune the world has ever known is used unreasonably to fetter the lives of physicians of middle age who have children to support and educate is *all wrong.* As in other paths in life, it is *character,* and not artificial restrictions, that matters.

GRAHAM LUSK, New York.

BLOOD PRESSURE IN ANESTHESIA

To the Editor:—In THE JOURNAL, March 22, an article by G. Brown (*M. J. Australia* **1**:53 [Jan. 19] 1924) on blood pressure during anesthesia is thus abstracted:

> If during an operation the systolic blood pressure falls to 80 mm. or less, and the pulse pressure to 20 mm. or less, with a pulse rate of 100, Brown terminates the operation as quickly as possible and restorative measures are employed. If this circulatory depression continues for more than twenty minutes, the patient will probably die within three days. Whenever possible the anesthetist should examine the patient fully a day or two before the operation.

This is simply the rule formulated and propounded by E. I. McKesson of Toledo several years ago, slightly modified. McKesson first worked out the relation of blood pressure to operative procedure and to shock, over a period of years and in a large series of clinical "operating-room-run" cases. He has shown that the sphygmomanometer diagnoses shock several minutes before it becomes clinically evident, thus allowing a warning to be sounded and treatment to be instituted that much earlier. What anesthetists have come to call "McKesson's law" or "McKesson's rule" is as follows: A pulse rate of 100 and ascending, with progressively falling blood pressure reaching 80 systolic and a pulse pressure of 20 or less, if continued over thirty minutes, invariably ends in shock.

He adds that a considerable number of these patients, i. e., those who have those readings for that period of time, will succumb within seventy-two hours unless treatment is promptly used, i. e., instituted immediately on the blood pressure fall and before the clinical evidence of shock is manifest.

W. HAMILTON LONG, M.D., Louisville.

CONVALESCENT SERUM IN ERYSIPELAS

To the Editor:—In an article with this title (THE JOURNAL, March 15) Jordan and Dustin state that "owing to lack of literature on the subject, it seems advisable to give an impartial report of its use and preparation." In the *Archives of Pediatrics* (**32**:519, 1915) is a report by A. D. Kaiser on "A Case of Erysipelas Treated with Whole Blood from Convalescent Patient." While on my way to Buffalo in April, 1914, to report before the New York State Medical Society on the results obtained with whole blood in the treatment of toxic scarlet fever, I was asked by Dr. Joseph Roby of Rochester, N. Y., to see a patient of his, the child of a local physician, who was suffering from an extensive erysipelas

following vaccination. I injected the child intramuscularly with 210 c.c. of whole blood obtained from a seven day convalescent erysipelas patient according to the method I suggested in the treatment of toxic cases of scarlet fever (*Arch. Pediat.* **31**:912, 1914). The rapid improvement in the clinical condition of the child following the injection of the convalescent erysipelas blood was quite strikling, and suggested itself as a suitable clinical report, which Dr. Kaiser made.

ABRAHAM ZINGHER, M.D., New York.
Assistant Director, Bureau of Laboratories, Department of Health, City of New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIACETIC ACID AND ACETONE IN ALKALINE URINE

To the Editor:—1. Can diacetic acid be present (as shown by the iron reaction) in urine alkaline to litmus? Can acetone be present (as shown by the nitroprussid reaction) in urine alkaline to litmus? 2. Does the presence of diacetic acid or acetone in urine prove that the patient has acidosis?

F. N., M.D., St. Louis.

ANSWER.—1. The answer will depend, to a certain extent, on the type of alkalinity of the urine in question; that is, whether the urine is alkaline as passed or whether it has become alkaline because of decomposition on standing. Both diacetic acid and acetone may be detected in fresh alkaline urine without any difficulty. Indeed, all of the better known tests for acetone require the addition of alkali in the performance of the tests. This applies to the nitroprussid reaction. In regard to diacetic acid, it is to be said that this substance may disappear from the urine on such long standing as is necessary to change the normal reaction of the urine from acid to alkaline, so that diacetic acid may not be found in decomposed urine, although the acetone formed from it may be present in large amounts. The question of the alkaline reaction in decomposed urines is not the only factor to be considered here, as the conversion of the diacetic acid to acetone takes place on standing, even though the reaction of the urine remains acid. Both acetone and diacetic acid are volatile and may disappear from the urine in a relatively short time, so that such tests should be applied to urine that is relatively fresh if the best results are to obtain. A further point to be remembered is that urine that is alkaline from administration of bicarbonates may give a confusing red with Gerhardt's test (iron reaction), although the color tone is not exactly the same as that given by diacetic acid. While there should be no confusion here, there may be a mistake in the interpretation of the color given by the ferric chlorid, the reaction being due to the formation of inorganic ferric compounds instead of the true mahogany red compound of diacetic acid.

2. The presence of diacetic acid and acetone does not prove the existence of an acidosis, especially an acidosis associated with faulty handling of the carbohydrates or one due to a limitation of the intake of carbohydrate food. Probably a better definition of this condition would be a "ketosis" rather than an "acidosis," as we may have an acidosis which is not, necessarily, associated with an output of acetone and diacetic acid in the urine.

WHITE PRECIPITATE IN URINE AFTER BENEDICT TEST

To the Editor:—I have examined specimens of urine which, when tested with Benedict's solution, gave a chalky white precipitate. Tested with Fehling's solution, they gave a typical reddish yellow precipitate. Tested in a fermentation tube with yeast, they formed gas. Apparently these urines contained glucose. What is the explanation of the white precipitate with Benedict's solution?

M. B. ROSENBLÜTH, M.D., New York.

ANSWER.—It is not an infrequent finding to note, when Benedict's solution is used in testing urine for sugar, that a whitish precipitate is formed without any reddish, yellowish or greenish tint being noticed. This may indicate either the absence of sugar, or, in case the urine has not been boiled sufficiently, an incomplete sugar reaction. Benedict's test is much more delicate for sugar than is Fehling's test, but the latter reacts more easily with such substances as uric acid and creatinin than does Benedict's test. However, in using the Benedict solution, one must be careful to boil the mixture of urine and reagent for from one to two minutes and allow to stand. The typical sugar reaction appears only on the cooling of the heated mixture. If the specimens of urine mentioned ferment with yeast, there is hardly any question of the presence of sugar, but it is rather hard to understand why the reaction with Benedict's solution was not positive, also, especially if the tests were properly performed. Such a short heating as is used with the Fehling solution may not bring out the reaction with the Benedict test. It would be advisable to test these urines again, using Benedict's solution in the proper way.

TYPHOID VACCINATION

To the Editor:—Last October, one member of a family of eight developed typhoid fever. They refused typhoid vaccination on the ground that "what was to be would be." When the mother and a sister also developed typhoid fever, the rest of the family wanted to be vaccinated immediately. Two of them received two typhoid inoculations, which did not modify the course of the disease. The other three received three inoculations, and, at the end of a month, two of them came down with typhoid fever. One of the three is still sick in the seventh week of the fever, and had rose spots and intestinal hemorrhages. Only one out of eight escaped the disease, and in that family the typhoid inoculation was only 33⅓ per cent. effective. I gave the injections at six or seven day intervals, instead of ten, as I was anxious to get the benefits of the vaccination, and time was precious. Was the failure of the vaccination to protect due to the seven day interval, or to overheated attenuated vaccine? I used fresh stock vaccine which was good for several months, and the usual dose.

H. M. CORNELL, M.D., Dulce, N. M.

ANSWER.—Besides the possibility that the vaccine used in these cases may have been ineffective, two other possibilities also merit consideration:

1. Is it possible that it concerns a form of typhoidal infection not covered by the kind of vaccine used? This question cannot be answered from the facts at hand, as the inquirer does not say whether the vaccine contained paratyphoid as well as typhoid bacilli.

2. The second possibility that should be considered is that the infecting doses may have been so large that the resistance built up by the injections of vaccine was overcome. It is a fact that immunity acquired from vaccination is relative, and that unusually large doses of virulent germs may result in active infection even in the vaccinated. Were the conditions in this family outbreak such that massive infection might have taken place?

It seems highly doubtful that the intervals between the injections constituted the decisive factor in the failure of vaccination to protect.

ACETONE AND DIACETIC ACID, WITHOUT GLUCOSE, IN THE URINE

To the Editor:—What pathologic conditions can produce acetone and diacetic acid in the urine without glucose? The patient manifests no diabetic symptoms, and yet I am at a loss to account for the diacetic acid and acetone being present in the urine.

H. H. HOLDERMAN, M.D., Shenandoah, Pa.

ANSWER.—There are many conditions in which we may find acetone and diacetic acid, without glucose, in the urine. Among such conditions may be mentioned high febrile states, carcinoma, inanition, certain lesions of the central nervous system, marked digestive disturbances, delayed chloroform poisoning, cases of pregnancy in which death of the fetus has occurred or in which persistent toxic vomiting is noted, and cyclic vomiting. All of these conditions may, possibly, be traced to faulty handling of the carbohydrate intake (that is, to a diminished power of utilization of the carbohydrates), or to a marked limitation of the carbohydrate element of the food.

PROPHYLACTIC OINTMENT FOR VENEREAL DISEASE

To the Editor:—Please let me know the name of the concern that puts up the Metchnikoff ointment in collapsible tubes for prophylaxis against the venereal diseases. I have seen several tubes on the market, but none referred to the ointment as that of Metchnikoff.

J. J. S., M.D., New York.

ANSWER.—Most pharmaceutical houses market an ointment containing 30 per cent. mild mercurous chlorid (calomel) in collapsible tubes. It is sometimes called calomel ointment, 30 per cent.; other times, ointment of mercury chlorid mild, 30 per cent. This is essentially Metchnikoff's ointment; the base may differ, but Nichols and Walker have reported that this makes little difference.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 13-14. Sec., Dr. J. W. Walker, Fayetteville.
HAWAII: Honolulu, April 14. Sec., Dr. Guy C. Milnor, 401 Beretania Street, Honolulu.
ILLINOIS: Chicago, April 15-17. Supt. of Registration, Mr. V. C. Michels, Springfield.
MASSACHUSETTS: Boston, May 13-15. Sec., Dr. Charles E. Prior, 144 State House, Boston.
NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.
NEW MEXICO: Sante Fe, April 14-15. Sec., Dr. W. T. Joyner, Roswell.

KANSAS CITY COLLEGE OF MEDICINE AND SURGERY

Kansas City, Mo.

Report of an investigation by the Connecticut Special Grand Jury, made to the Superior Court, Friday, March 14, 1924.* To the Honorable Superior Court Holden at Hartford, Within and for the County of Hartford, on the First Tuesday of March, A. D., 1924, and Now in Session:

The grand jurors within and for said county, upon their oaths present and inform as follows:

. . . . . .

We, the grand jury, find that of the persons licensed to practice the healing arts in Connecticut, the following have been so licensed by the state board of health on certificates from the Connecticut board of eclectic examiners qualifying the persons named therein to receive such licenses; that the issuing of such certificates followed an examination by the Connecticut board of eclectic examiners, the right to take the examination being founded on the possession of diplomas purporting to show that the holders thereof were graduates in eclectic medicine from the Kansas City College of Medicine and Surgery, of Kansas City, Missouri:

KANSAS CITY COLLEGE LIST

Aronson, D. K., Waterbury
Bagby, R. O., Kansas City, Mo.
Beard, C. A., Bridgeport (1921)
Beeby, C. B., Kansas City, Mo.
Bockman, James, New York
Bond, Alva B., St. Louis
Boone, R. F., Kansas City, Mo.
Brein, Arnold, Waterbury
Bruce, J. W., Kansas City, Mo.
Burkhead, N. H., Darien
Burstan, Lillian L., Bridgeport
Burstan, M. B., Bridgeport
Bush, A. P., New Britain
Bush, J. W., New Britain
Carlson, E. J., Pittsburg, Kan. (1922)
Carmody, Wilma G., Kansas City, Mo.
Christian, J. A., Fairfield
Cohn, A. R., Philadelphia
Coombs, LeRoy, East Norwalk
Cotner, J. W., Stratford
Cotner, Jennie S., Stratford
Covey, R. E., Kansas City, Mo.
Daily, P. S., Bridgeport
Daniel, A. L., Kansas City, Mo.
DeGaetani, F. M., New Haven
DeJanis, A. R., Bridgeport
Ellis, C. B., Kansas City, Mo.
Finaldi, Ralph, Waterbury
Fitzgerald, L. M., Kansas City, Mo.
Fleischman, M. H., Kansas City, Mo.
Flynn, J. J., Kansas City, Mo.
Galbreath, W. O., Bridgeport
George, Irva M., New Haven
Glass, Aaron, New Haven
Goodwin, Allie J., Kensington
Guild, W. A., Des Moines
Hammond, P. L., see St. Louis list
Hedge, M. O., Boston
Hobbs, A. G., St. Louis
Hobbs, C. L., St. Louis
Hopper, E. P., Bridgeport
Horton, R. B., Kansas City, Mo.
Hoshizaki, K. J., Houston, Texas
Huber, L. E., Moberly, Mo.
Hull, E. M., St. Louis
J'Anthony, M. M., Torrington
Jarco, L. W., Moberly, Mo.
Jergens, Sigurd, Chicago
Kafka, B. I., Bridgeport
Karp, J. P., Hartford
Kelso, James (retired) Portsmouth, Ohio
Koutsoumpas, W. V., St. Louis
Kram, Elias, Kansas City, Mo.
Lape, E. A., Maywood, Ill.
Leondides, D. J. C., New Haven
Leven, A. S., Los Angeles
Long, R. F., Terryville
Long, R. A., Westport
Marzio, P. V., New Haven
McCarthy, Nathaniel, New Canaan
McClure, J. H., New Haven
McCormack, W. D., Willimantic
McIver, J. M., Philadelphia
McNarry, E. W., St. Louis
Miller, G. H., Kansas City, Kan.
Noeling, G. D., Bridgeport
Osborn, H. D., Milford, Kan.
Pinkerton, H. W., Bridgeport
Posner, Samuel, Brooklyn
Pyrtle, A. H., St. Louis
Rankin, C. D., St. Louis
Richardson, G. A., Bridgeport
Richardson, J. W., Waterbury
Salas, A. M., Waterbury
Schirmer, J. S., Urbanette, Ark.
Scott, M. H., see St. Louis list
Sharp, Bess W., Kansas City, Mo.
Shenton, A. W., South Norwalk
Shireson, H. J., Chicago
Simmons, R. H., Kansas City, Mo.
Slabotsky, Samuel, Derby
Sprick, Elizabeth A. C., St. Louis
Steward, C. M., Kansas City, Mo.
Teubel, E. C., Bridgeport
Thomas, B. J., Falls Village
Tupper, G. W., Southampton, Pa.
Van Halteren, G. W., Ft. Worth, Texas
Von Sassenhofen, A. C. H., New Haven
Warden, L. M., Center Hill, Ark.
Wesson, P. D., St. Louis
Wheeler, H. M., Bridgeport
White, I. A., St. Louis
Wilson, Margaret, Los Angeles

DIPLOMAS SURE IF PAID FOR

The grand jury made inquiry as to the equipment, teaching staff and curriculum of the Kansas City College of Medicine and Surgery. We, the grand jury, find that many persons have been admitted to examinations held by the Connecticut board of eclectic examiners by virtue of possession of diplomas from the Kansas City College of Medicine and Surgery, and hold licenses to practice medicine in Connecticut based on examinations by certificate of that board.

The paid teaching staff consists of two men who receive $100 a month. The school is owned and operated by Dr. D. R. Alexander. There has not been a meeting of the faculty since 1915. There are no persons connected with this college who have any knowledge of educational qualifications or the administering of an educational institution from the standpoint of efficiency. The conditions existing in this college are almost unbelievable. The man who was introduced as the teacher of anatomy is not a doctor. The head of the school said he was enrolled as a student but the records of the school did not bear out this statement. The classes are taught together; there is no attempt to verify the credentials presented by applicants for admission to the college and the entrance requirements are practically nil. The head of the school stated that if a student claims to have passed certain courses of study he accepts his statement as it makes no difference to him! Any one is welcome and any one who has the cash to pay is sure to go away with a diploma. Diplomas are issued to applicants at a charge of approximately $200 each, and these diplomas are issued for the purpose of giving the holder thereof the opportunity to appear before eclectic examining boards in some states but principally Connecticut.

The dishonorable traffic in diplomas to be used for this purpose was freely admitted by the head of the school coupled with the statement that hereafter the price would be higher.

It was impossible to obtain a medical education in this college—and students knew it and the diplomas were sought and obtained for the purpose of practicing fraud on the authorities in the state of Connecticut. The persons receiving a license from the state of Connecticut founded on a certificate issued by the eclectic board as a result of examinations of such persons, as graduates of this school, received them because of the fraud and deceit practiced on the authorities in Connecticut.

DIPLOMAS OBTAINED IN ONE HOUR

We, the grand jury, find that there was some question at one time as to the St. Louis College of Physicians and Surgeons and that persons went from that college, and from elsewhere, to the Kansas City College of Medicine and Surgery and came away in less than an hour with a diploma from the latter college. So-called doctors examined by the grand jury admitted that they never attended courses of study at the Kansas City College of Medicine and Surgery, had spent less than an hour at that institution and had paid from $50 to $300 for the diplomas received.

There is a respectable and apparently responsible National Eclectic association, the officers of which protested to the Connecticut Eclectic society and warned against examining persons holding diplomas from the colleges above named, characterizing them as frauds and "bastard institutions." Yet notwithstanding this warning, and the knowledge which the warning would have conveyed to honest, intelligent persons, the Connecticut Eclectic society, composed in the main of graduates from these fraudulent institutions, voted to place them on the list of colleges whose graduates would be accepted by the Connecticut board of eclectic examiners for examination.

CALL BOARD PARTY TO FRAUD

Notwithstanding the fact that the law requires that the names of colleges acceptable by the Connecticut Eclectic society shall be filed with the commissioner of health, many persons holding diplomas from the St. Louis College of Physicians and Surgeons were examined by the Connecticut eclectic examining board at a time when this school was not on the list of colleges approved by the Connecticut Eclectic society on file with the state commissioner of health. The attorney general for the state of Connecticut ruled that licenses issued under such circumstances were invalid. There

* Reprinted from the Hartford (Conn.) Daily Times, March 14, 1924.

was an attempt made to validate these licenses by legislative act. This effort failed, and the Connecticut Eclectic society thereupon voted to put the college on the list of acceptable institutions, reexamine the doctors whose licenses were invalid under the ruling of the attorney general; all of the doctors taking these examinations were passed, and the society thereupon took the St. Louis College of Physicians and Surgeons off the list. This college was put on the list of colleges approved by the Connecticut Eclectic society temporarily for the purpose of practicing a fraud on the Connecticut board of eclectic examiners, the health commissioner and the state of Connecticut. The Eclectic society and the board of examiners were willing parties to this fraudulent conduct.

JURY CONDEMNS SCHOOL

Persons presenting diplomas from the above named institutions as certificates entitling them to be examined to obtain a license to practice the healing arts in Connecticut must be barren of that sense of honor which should be a part of the makeup of all persons seeking to become members of a profession. They lack any sense of the duty which one owes to his or her profession and to humanity. Persons devoid of this sense of responsibility to the profession of which they are or seek to become members are unfitted for membership therein. If there are any qualifications of professional honor to be observed they must be applicable with singular force to the calling of a physician. The lawyer's mistakes may cost his client some money; the courts can invariably correct his blunders, but from the blunder of the physician there is no appeal. We, the grand jury, found many persons holding licenses issued by the state board of health on certificates from the Connecticut eclectic examining board who could not describe the symptoms of diphtheria, scarlet fever, smallpox, or other contagious or infectious diseases.

Several members of the Connecticut board of eclectic examiners have testified that they believed a fraud had been perpetrated on them by the holders of diplomas from the above named institutions. They have taken action based on knowledge of the fraud which was perpetrated on them, and that action, though somewhat belated, was in the interests of the welfare of the state of Connecticut and the public in general.

The claim advanced by persons holding diplomas from the four institutions named herein that such institutions or any of them were qualified to teach, or, in fact, did teach eclectic medicine as that term is understood by the medical profession, was absolutely false, and when made by persons whose names appear in this presentment as graduates from any of the four institutions above named, were known by such persons to be false, and were made by such persons for the purpose of deceiving the authorities of the state of Connecticut, and for the purpuse of obtaining, through fraud and deceit, a license from the state board of health as a person qualified to practice the healing arts in Connecticut, which qualification must be based on a properly conducted examination of a properly qualified person by the Connecticut Board of Eclectic Examiners. The persons guilty of this conduct knew what they were doing, and the licenses issued to them by the state board of health were issued as the result of the fraudulent and deceitful practices indulged in by those individuals in obtaining licenses to which they were not entitled.

COURT ACTION SUGGESTED

We, the grand jury, find that the evidence of this fraud and deceit is easily obtainable and susceptible of presentation in court in the event that judicial proceedings should make a proper presentation of evidence in a court in Connecticut either advisable or necessary.

Some persons holding licenses in Connecticut have voluntarily surrendered them. Conscience was awakaned and the privilege which was fraudulently obtained was voluntarily surrendered. Evidence showing flagrant violations of the law have been recorded. These matters will be dealt with separately.

We, the grand jury, have not completed our investigation into the conditions existing in Connecticut, by reason of the operation of the law regulating the practice of the healing arts.

Various sessions of the legislature have been indifferently responsive to suggestions which have not always been in the interest of public health, as a result of which the public has been victimized. Fakers and charlatans have found that advertising agencies can secure publicity through newspaper advertisements. In many cases the returns from the sale of advertising space have in the minds of newspaper proprietors outweighed the harmful result of the publication of false and misleading advertisements; and Connecticut is more or less unique in this respect.

We, the grand jury, have diplomas, certificates, letters, reports, records, and a record of oral testimony taken, but we do not feel that the interests of public justice would be served by publication of the evidence or any of our exhibits at this time.

THE GRAND JURY,
By Benedict M. Holden, Foreman.

Book Notices

NERVOUS AND MENTAL RE-EDUCATION. By Shepherd Ivory Franz, Director of Laboratories, St. Elizabeth's Hospital (Government Hospital for the Insane). Cloth. Price, $2. Pp. 225, with 68 illustrations. New York: The Macmillan Company, 1923.

This little book should be read by every physician, regardless of the particular kind of practice in which he is engaged. Apart altogether from the technicalities of application of methods of reeducation to residuals of nervous disease, the psychoneuroses and psychoses with the simple and ingenious measures employed, the author has presented examples of what can be accomplished by a sincere effort to study the patient and his handicaps, and plan a helpful and hopeful manner of meeting them. Too often the physician or surgeon contents himself with seeing his patient through the active stages of disease, and then leaves him with a tacit suggestion that his handicap is hopeless. The attitude of mind thus engendered, reenforced by fears and timidity, may result in a resigned acceptance of hopeless incapacity. Dr. Franz demonstrates clearly that results that seem almost miraculous can be secured by planful efforts directed toward the development of new habits to replace the old that have been lost. In addition to the general lesson, the book gives in simple and well illustrated form some much needed instruction in rational physiotherapeutics.

A COMBINED TEXT-BOOK OF OBSTETRICS AND GYNAECOLOGY. By J. M. Munro Kerr, M.D., F.R.F.P., F.R.F.S., Professor of Obstetrics and Gynaecology, Glasgow University (Muirhead Chair); James Haig Ferguson, M.D., F.R.C.S., Gynaecologist, Royal Infirmary, Edinburgh; James Young, D.S.O., M.D., F.R.C.S., Assistant-Physician, Royal Maternity Hospital, Edinburgh, and James Hendry, M.A., B.Sc., M.B., Senior Assistant to the Muirhead Professor, University of Glasgow. Cloth. Price, $10. Pp. 1106, with 474 illustrations. New York: William Wood & Co., 1923.

Thirty years have passed since obstetrics and gynecology have ventured to appear in the same volume. It is an interesting experiment, and yet extremely rational. The interdependence and relationship are everywhere apparent, while many of the chapters would be identical. Thus, the anatomy, physiology, embryology, the problems of sterility, the diagnostic distinctions between pregnancy and pelvic tumors, and the etiologic factors in amenorrhea would easily be duplicated if the subjects were treated separately. The operative work of both sections is well covered, although to a man trained in other schools of obstetrics it seems awkward to see the patient in the lateral position when forceps are applied or versions done. It is encouraging to find in this recent book that morphin-scopolamin narcosis is beginning to find authoritative acceptance. On the other hand, we are conscious of some antagonisms in the obstetric section. Thus, the massage of engorged breasts has long been abandoned in this country, together with the tight binder. The treatment given on page 543 contradicts that given for almost the same condition on page 535, but it is far more modern and efficient. The measurement of the pelvis is adequately discussed; but the equally necessary and far more successful estimate of the child in utero by the McDonald and Ahlfeld methods is not mentioned, while the Perret maneuver with its invaluable modifications is dismissed with a word. A science is not very useful or

competent which calibrates the passage but disregards the passenger. Probably the least premeditated presentation of material is that in the chapter on the induction of labor. The indications, to be sure, are adequately developed, but the technic is archaic. It has long been recognized that the use of the bougie for induction is attended with extreme uncertainty of operation together with the possibilitiy of placental separation and perforation of the uterus, and yet the authors virtually limit us to this method, although a cursory review of the literature would reveal that the bougie has been superseded almost universally by the Voorhees bag, with which these difficulties do not appear. The main question in this book, however, is not one of technic or of doctrine, but whether obstetrics and gynecology can be successfully treated in one volume. The combination, of course, makes for brevity, and we are spared many of the tedious discussions; but, on the contrary, it is occasionally distressing to see an important subject meagerly treated, as, for instance, the care of the premature child, which is dismissed in sixteen lines. Still, the two specialties are so intimately related in practice and principle and so reciprocally dependent that the knowledge of one is incomplete without the other. This close kinship is everywhere observed and emphasized, and the result is an illuminating and, on the whole, satisfactory study in compression.

ATLAS OF OTOLOGY. Illustrating the Normal and Pathological Anatomy of the Temporal Bone. By Albert A. Gray, M.D., F.R.S.E., F.R.F.P.S.G., Lecturer on Diseases of the Ear, Glasgow University. Cloth. Price, 6 pounds, 6 shillings. Pp. 49, with 92 illustrations. Glasgow: Maclehose, Jackson & Co., 1924.

This is a contribution that otologists will welcome. Dr. Gray has been an indefatigable worker in both the anatomy and the pathology of the ear. In the atlas are given photographic reproductions, many of them stereoscopic, of selected preparations from his work, including the normal as well as the pathologic conditions. American otologists will be particularly interested in the illustrations showing changes in the degenerative forms of deafness, such as those taking place in otosclerosis. The American otologist, as well as the medical profession at large, is in need of just such first-hand knowledge of the actual pathologic changes as the perusal of these preparations afford, in order to dispel any delusions regarding the alleged new methods of treatment being practiced extensively by medical charlatans on those suffering from incurable deafness, such as the purported treatment with attenuated roentgen ray on the pituitary body, or the manipulation of the equally innocent eustachian tube in those cases, by silver salts, and other bizarre methods of treatment by which the victims of incurable defects in the hearing are being imposed on. Dr. Gray is his own photographer, which accounts for the unusually successful reproductions of his interesting preparations.

FUNDAMENTALS OF ORGANIC AND BIOLOGIC CHEMISTRY. By Thomas Guthrie Phillips, Ph.D., Professor of Agricultural Chemistry in the Ohio State University. With a Foreword by Alfred Vivian, Dean of the College of Agriculture of the Ohio State University. Cloth. Price, $2. Pp. 260. New York: D. Appleton & Co., 1923.

According to the introduction, written by Professor Vivian of the Ohio State University College of Agriculture, the aim of Dr. Phillips has been to prepare "a brief course in the fundamentals of organic and biologic chemistry, . . . which is of importance to the student who is not majoring in chemistry." This, it seems, has been done. The book is not short or popular enough for a layman, and yet not sufficiently broad to be recommended as a textbook for a serious organic chemistry course. The title is too comprehensive; a number of "fundamentals" have been omitted in the organic section, and still more from the biologic discussions. The danger is that many reactions or statements appearing in the contents will be taken by the student for 100 per cent. fact without his realizing the existence of the "ifs" and "ands" of "paper chemistry" reactions. Such a treatise may be suitable for students in agricultural courses, but its use by premedical students is not recommended. The typographic appearance of the book is good; the chemical reactions have received careful proofreading, and the boldface side heads have been employed in a manner that should be pleasing to the student.

Medicolegal

Sanipractor Held Liable for Malpractice—Evidence

(Wilcox v. Carroll (Wash.), 219 Pac. R. 34)

The Supreme Court of Washington, in affirming a judgment for $2,500 damages in favor of the plaintiff for the death of her son, aged 8 years, alleged to have been caused by the negligence of the defendant, says that the defendant, who was called a sanipractor, was not licensed as a full sanipractor, but to use the methods of treating disease known as hydrotherapy, dietetics, electrotherapy and psychotherapy. The boy was taken ill on Wednesday, complaining of stomach ache, and the next day was confined to his bed. On Friday the plaintiff telephoned to the defendant, expressing a fear that the boy had appendicitis, but was told that the appendix did not form until a child was at least 10 years of age. That same day the plaintiff took the boy to the defendant's office, and was told that the disease was either spinal meningitis or infantile paralysis—later, inflammation of the spine and congestion of the bowels. Daily for seven days the defendant gave treatments at his office, the boy being taken there in an automobile. The treatments in general consisted of electric massage of the spine, alternate applications of hot and cold compresses to the abdomen and back, sitz baths, and internal baths. By direction, no food was given until the sixth day, when, as the plaintiff testified, she told the defendant that the boy asked for food, and the defendant said that he might have a little beef broth and a little diluted grape juice, which were given that night and the next day. On the eighth day, the defendant was summoned to the home, where, at about 2:30 p. m., he wrapped the boy in a wet sheet, and left with instructions to be called at 5:30. The boy's temperature dropped to about 94, when the plaintiff telephoned to the defendant, before the prescribed time, and the defendant said there was something about the condition that he did not understand; to take the boy out of the wet sheet and call a regular physician, but not to let him know that the defendant had been treating the case. A regular physician was called, who diagnosed the disease as acute appendicitis, in which the appendix had already burst and peritonitis had set in. He found the boy in virtually a dying condition, but believed that he would have more chances of surviving with an operation than without, and so operated that night. When the abdomen was opened, at least a pint of pus shot out, and the appendix was found to be ruptured and gangrenous. The boy died the next morning.

The defendant stated, and it was conceded, that the first proposition of law governing the case was that it is the law in the state of Washington that a physician cannot be held liable for damages for merely making a wrong diagnosis, and that there can be no liability until an improper treatment follows the wrong diagnosis. The defendant then contended that the facts showed that the treatment which he gave was correct according to the school or class to which he belonged, whether the disease was appendicitis, or was as diagnosed by the defendant.

Of course, it must be admitted that, when the plaintiff employed the defendant to doctor her child, she knew that he belonged to what is called the drugless school of healing, which would not operate. She could not be heard to complain because an operation was not performed or advised by the defendant. She could not employ a doctor who she knew would not operate, and then recover damages because an operation was not performed. But there was more evidence to go to the jury than the matters covered by the foregoing proposition. While it was true that there was a conflict of evidence as to who was responsible for the moving of the patient and for giving him food, yet there was evidence that it was the defendant, and the facts were for the jury. Since his own experts stated that absolute or nearly absolute quiet should be prescribed for a patient suffering from appendicitis, and that the giving of food to such a patient was negligent, and probably would prove fatal, the jury believing these facts, the negligence of the defendant was established.

What the regular physicians found was the result of their examination of the history of the case, and of their operation, and there could be no avoidance of introducing their evidence of what they found as to the condition of the child. The fact that they operated on the child when the defendant, in following the system of practice of the school of healing to which he belonged, would not operate, and what they found on operating, could not be held to prejudice the defendant.

"Disfigurement" Defined—When Compensation Is Allowed

(Superior Mining Co. v. Industrial Commission et al. (Ill.), 141 N. E. R. 165)

The Supreme Court of Illinois, in reversing a judgment that confirmed an award of the industrial commission for a disfigurement over the left eye of an injured employee, says that the object of workmen's compensation laws is to compensate for loss of earning power resulting from industrial accidents. While it is not necessary that there should be a showing of an actual loss of earning power before compensation can be made for a disfigurement, the evidence ought to show that the disfigurement for which compensation is sought bears some relation to the capacity to earn and to secure profitable employment. When a man has suffered serious injuries to his hands, head or face, it is often true that they are of such a character as to place him at a decided disadvantage when applying for work, and on that theory it is just and proper that provision should be made for compensation for such disfigurements. The workmen's compensation act does not provide compensation for every mark or scar, or for every disfigurement. A disfigurement is that which impairs or injures the beauty, symmetry or appearance of a person or thing; that renders unsightly, misshapen or imperfect, or deforms in some manner. Before compensation can be awarded under the act, there must be a disfigurement, and that disfigurement must be both permanent and serious. It was certainly not intended under this provision to authorize compensation for every trifling mark that could be discovered by the closest inspection. In this case a physician testified that when he was standing 10 feet from the claimant he could not see a scar, but when he moved to within 2 feet of him and lifted up the supra-orbital skin he could see two light blue scars, one about one-quarter and the other about three-quarters inch long. Another witness testified that when the eyebrow was raised by the hand he could see the blue scars at a distance of 4½ feet. The court does not consider that the proof disclosed a disfigurement, much less a serious one.

Damages for Nausea

(Jackson Coca-Cola Bottling Co. v. Renna (Miss.), 97 So. R. 674)

The Supreme Court of Mississippi, Division B, says that this action was brought by plaintiff Renna to recover damages for an illness alleged to have been caused by drinking Coca-Cola from a bottle that contained a partially decomposed spider. The court does not state what the evidence was, but holds that under the evidence a verdict for $1,000 in favor of the plaintiff was grossly excessive, and that, in view of that fact, it was prejudicial error to give an instruction which authorized the jury to return a verdict in "such sum of money, not to exceed $6,000, the amount sued for, as you may think from a preponderance of the evidence will compensate the plaintiff for such nausea or sickness." If the plaintiff would remit $500 from the judgment of $1,000, the court was willing to affirm the resulting judgment for $500; otherwise the cause must be remanded for trial on the question of damages.

Effect of Working in Heat and Cold Not Accidental

(Taylor v. Swift & Co. (Kan.), 219 Pac. R. 516)

The Supreme Court of Kansas, in reversing a judgment for damages recovered by the plaintiff, says that he alleged that, while in the employ of the defendant, he was required to work in and out of a meat-cooling room and of refrigerator cars when the weather on the outside was hot; that he strained himself in lifting and became overheated whereby he contracted a severe cold and the grip, which settled in his legs, paralyzing him from his hips down. The court holds that his affliction did not arise from an accident within the meaning of the workmen's compensation act. The exposure caused by working in and out of a cooler or refrigerated wareroom is undoubtedly hard on the human constitution; it may wear down and gradually weaken a working man's powers of endurance, and render him more liable to various diseases, including possibly transverse myelitis, as contended for in this case by the plaintiff. But such work and such exposure, although regrettable consequences flow therefrom, do not constitute an industrial accident within the meaning of the compensation act.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Chicago, June 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Montgomery, April 15-18 Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association of Anatomists, Buffalo, N. Y., April 16-19. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., May 26-28. Dr. Henry G. Bugbee, 40 East 41st St., New York, Sec'y.

American Climatological and Clinical Association, Atlantic City, May 1-3. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.

American Dermatological Association, Minneapolis, Minn., June 5-7. Dr. Udo J. Wile, 211 East Huron Street, Ann Arbor, Mich., Secretary.

American Gastro-Enterological Association, Atlantic City, May 5-6. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Gynecological Society, Hot Springs, Va., May 15-17. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Swampscott, Mass., June 2-4. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, May 29-31. Dr. W. H. Haskin, 40 East 41st Street, New York, Sec'y.

American Neurological Association, Philadelphia, June 5-7. Dr. Frederick Tilney, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Hot Springs, Virginia, May 26-28. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Orthopedic Association, Baltimore, May 15-17. Dr. Forrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Otological Society, Swampscott, Mass., June 3-5. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.

American Pediatric Society, Pittsfield, Mass., June 5-7. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Psychiatric Association, Atlantic City, June 3-6. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y., Secretary.

American Society of Clinical Pathologists, Rochester, Minn., June 5-7. Dr. Ward Burdick, 652 Metropolitan Building, Denver, Secretary.

American Surgical Association, Baltimore, April 17-19. Dr. Robert B. Greenough, 8 Marlborough Street, Boston, Secretary.

American Urological Association, Atlantic City, June 3-5. Dr. Homer G. Hamer, 723 Hume-Mansur Building, Indianapolis, Secretary.

Arizona Medical Association, Phoenix, April 24-26. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Fayetteville, May 20-22. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

California Medical Association, Los Angeles, May 12-15. Dr. Emma W. Pope, Balboa Building, San Francisco, Secretary.

Connecticut State Medical Society, Hartford, May 28-29. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Association of, Augusta, May 9-11. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Hawaii, Medical Society of, Honolulu, April 26-28. Dr. W. K. Chang, McCandless Block, Honolulu, Secretary.

Illinois State Medical Society, Springfield, May 6-8. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Des Moines, May 7-9. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Wichita, May 7-8. Dr. J. E. Hassig, 804 Elks Building, Kansas City, Secretary.

Louisiana State Medical Society, Opelousas, April 21-24. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-24. Dr. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.

Mississippi State Medical Association, Jackson, May 13-15. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Springfield, May 6-8. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

National Tuberculosis Association, Atlanta, Ga., May 7-10. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

Nebraska State Medical Association, Omaha, May 13-15. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Jersey, Medical Society of, Atlantic City, June 5-7. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.

New Mexico Medical Society, Santa Fe, May 27-29. Dr. Charles M. Yater, Roswell, Secretary.

New York, Medical Society of the State of, Rochester, April 22. Dr. Edward L. Hunt, 17 West 43d Street, New York, Secretary.

North Carolina, Medical Society of the State of, Raleigh, April 15-17. Dr. L. B. McBrayer, Sanatorium, Secretary.

Ohio State Medical Association, Cleveland, May 13-15. Mr. Don K. Martin, 131 East State Street, Columbus, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 13-15. Dr. C. A. Thompson, 508 Commercial Nat'l Bank Bldg., Muskogee, Sec'y.

Radiological Society of North America, Chicago, June 6-7. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Rhode Island Medical Society, Providence, June 5. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.

South Carolina Medical Association, Orangeburg, April 15-17. Dr. Edgar A. Hines, Seneca, Secretary.

Texas, State Medical Association of, San Antonio, April 29-May 1. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, April 17-18. Dr. Charles Wood Passett, 115 E. 31st Street, Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

27: 197-295 (March) 1924

*Atonic Insufficiency of Stomach Cause of Vomiting and Lack of Appetite in Infants. G. Lindberg, Norrköping, Sweden.—p. 197.
*Genitosuprarenal Syndrome (Suprarenal Virilism) in Girl One and a Half Years Old; Successful Operation. A. Collet, Christiania, Norway.—p. 204.
Teeth in Childhood. D. C. Mebane, Rochester, Minn.—p. 219.
*Two Cases of Acute Epidemic Encephalitis Occurring in One Family. F. G. Ebaugh, Philadelphia.—p. 230.
*Kidney Diseases in Infants and Children. II. Malignant Hypertension Nephritis: Primary Sclerotic Kidney (Schrumpfniere). H. Schwarz, New York.—p. 233.
*Uric Acid Metabolism of Children. J. S. Leopold, A. Bernhard and H. G. Jacobi, New York.—p. 243.
*Measles Transmitted by Blood Transfusion. H. Bauguess, Minneapolis.—p. 256.
Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 260.

Atonic Insufficiency of Stomach Causes Vomiting in Infants.—At birth and during the first weeks of life, incomplete emptying of the stomach is not an uncommon finding. The symptoms are vomiting or lack of appetite, or both. Lindberg asserts that the symptoms may disappear if the baby is kept in a half-erect position. The manner of carrying the baby in a half-erect position, slowly rocking it back and forth, continued for some time after each meal, is undoubtedly of therapeutic value. This therapeutic effect has been explained as being due to diminution of the amount of air present in the stomach, the air being more easily expelled through the cardia. The main benefit of carrying the babies in a more or less vertical position is, therefore, in all probability, an easier emptying of the stomach.

Suprarenal Virilism.—Collett's patient, a girl, was 18 months old, and presented abnormal hair growth, marked body development and premature development of the secondary sex characters. There was no sign of brain tumor or any striking growth in length such as is seen in those tumors with which premature sex development comes relatively late. The sex glands could not be felt, but a tumor in connection with and above the left kidney was found. The hirsuties or virilism present in this case was, therefore, supposed to be due to a tumor of the suprarenal gland cortex. Six months later the tumor was removed. It proved to be of relatively early origin, as it was infiltrated with lime (lime-atrophy). After the operation there was an essential improvement in the patient's condition. The patient also presented the picture of a partial hermaphrodism or a feminine pseudohermaphrodism, and presented, according to Apert's classification of hyperepinephry, the type for the fetal period.

Familial Acute Epidemic Encephalitis.—In two cases of acute epidemic encephalitis in children of one family reported by Ebaugh the question of contagion and their relation to postinfluenzal conditions were points of interest. The rarity of these instances suggests that they had better be looked on as accidental, and that the factor of direct transmission in acute epidemic encephalitis, with the facts now at hand, is practically negligible.

Malignant Hypertension Nephritis. — Three cases are recorded by Schwarz in which it was impossible to ascribe any one definite causative factor. One patient had had scarlet fever, but in the others there was no history of infectious diseases. Alcohol, tobacco or a metallic poison could be excluded. All three cases were characterized by a rapid course, and, although the exact length of time cannot be definitely stated, all died within a year after the onset of noticeable symptoms. The hypertension in these cases was marked and constant, both the systolic and diastolic pressures being greatly increased. The ophthalmologic findings were characteristic of these cases and similar to those found in the last stages of hypertension nephritis in the adult. There was a marked albuminuric retinitis present. The heart in all cases showed a moderate hypertrophy of the left ventricle. The blood vessels in one case that came to necropsy showed marked arteriosclerosis.

Uric Acid Metabolism of Children.—The uric acid metabolism of five normal children was studied by Leopold et al. The uric acid elimination for the twenty-four hour period remained fairly constant for the same person, while on a mixed purin-free diet. During the fasting condition, the uric acid elimination for the twenty-four hour period reached a minimum, and averaged approximately one third of the amount eliminated on a mixed purin-free diet. A high protein diet resulted in a greater uric acid elimination than did a purin-free diet. A diet high in carbohydrates did not result in a greater uric acid elimination, beyond that observed after a mixed purin-free diet. A high fat diet produced a marked diminution in the uric acid elimination when compared with the amount eliminated on a mixed purin-free diet, and this amount was slightly higher than that eliminated during the fasting condition. There was no relationship between the amount of uric acid eliminated and the total urinary output. The uric acid elimination did not bear any relationship to the total caloric value of the diet. The feeding of uric acid did not influence the amount of uric acid elimination in the urine. The administration of uric acid did not influence the concentration of uric acid in the blood. The blood concentrations of urea nitrogen, uric acid, creatinin and sugar remained unchanged regardless of the type of diet.

Measles Transmitted by Blood Transfusion.—In the cases reported by Bauguess it appears that measles occurred as a result of transfusion of blood. Two cases were observed in which measles was transmitted from the mother to the infant. Bauguess is of the opinion that the virus of measles is present in the blood at least two days before the appearance of the rash. His cases seem to establish the incubation period at thirteen and fourteen days.

Archives of Surgery, Chicago

8: 461-704 (March) 1924

*Paget's Disease of Female Nipple. J. C. Bloodgood, Baltimore.—p. 461.
*Congenital Deficiency of Diaphragm. E. C. Cutler and H. S. F. Cooper, Boston.—p. 506.
Pearly Tumors. P. Bailey, Boston.—p. 524.
*Importance of Periosteum and Endosteum in Repair of Transplanted Bone. S. L. Haas, San Francisco.—p. 535.
*Exhaustion. VI. Septicemia. G. W. Crile, Cleveland.—p. 557.
*Value of Sgambati's Reaction for Acute Peritonitis. H. Deutsch and E. A. Graham, St. Louis.—p. 588.
Multiple Bilateral Traumatic Parosteal Bone and Callus Formations of Femur and Left Innominate Bone. E. J. Carey, Chicago.—p. 592.
Congenital Cystic Dilatation of Common Bile Duct: Case with Cure. G. L. McWhorter, Chicago.—p. 604.
Clinical Study of Mobility of Human Spine. H. Keller, New York.—p. 627.
*Preoperative Chills in Appendicitis: Indication of Operable Stage of Pylephlebitis. W. Thalhimer, Milwaukee.—p. 658.
*Magnesium Wire as an Absorbable Suture and Ligature Material. M. G. Seelig, St. Louis.—p. 669.
Urologic Surgery. E. S. Judd, W. F. Braasch, A. J. Scholl and L. D. Keyser, Rochester, Minn.—p. 681.

Paget's Disease of Female Nipple.—In a review of thirty cases Bloodgood asserts that cancer of the nipple is preventable. He says, if a woman over 20 years of age feels a lump in the breast, or observes any change in the nipple, she should consult her physician the next day. He endeavors to teach what to do in the various stages of a lesion of the nipple.

Congenital Deficiency of Diaphragm.—Cutler and Cooper cite the case of a dog in which the opening in the diaphragm was not only in the anterior portion of the diaphragm but on the right side.

Importance of Endosteum and Periosteum in Bone Repair.—Experiments performed by Haas indicate that the removal of either the periosteum or endosteum alone is without affect on the healing of fractures in transplanted bones; but the removal of the periosteum and endosteum together causes a complete cessation of proliferation at the fracture surfaces, and consequently a failure of union in every case.

Exhaustion and Septicemia.—The effects of septicemia have been studied by Crile in various ways. All lines of investigation indicate that changes in the central nervous system are the primary cause of the cycle of phenomena which mark the progress of the exhaustion which is the end-result. The experimental evidence indicates that the liver and the suprarenals are associated with the brain in the production of the phenomena which are initiated by the changes in the brain. The limitation of the changes produced in normal animals by an infection, by the presence of agents which depress the activity of the central nervous system, strongly supports the conclusion that the brain is the primary factor in the response to infection.

Value of Sgambati's Reaction in Peritonitis.—The results obtained by Deutsch and Graham in their investigations indicate that Sgambati's reaction is not specific for peritonitis. The red obtained by this reaction is indigo red, an oxidation product of indoxyl. Its diagnostic importance is similar to that of indican.

Acute Appendicitis is Early Pylephlebitis.—Thalhimer urges that every case of acute appendicitis should be considered as a potential case of early pylephlebitis, whether there is a history of chills or not. Consequently, the appendix and its neighborhood should always be carefully inspected (at operation) for small thrombosed veins. Four cases of acute appendicitis accompanied by one or more chills were studied, in which bacteria-containing thrombi were found in the veins of the mesentery of the appendix. Three patients were submitted to operation, and the thrombophlebitic process was apparently checked; for no further chills or untoward symptoms occurred, and recovery was uneventful. In the fourth case, thrombi were found on gross and microscopic examination.

Metallic Magnesium Inhibits Bacterial Growth.—Seelig's experiments show conclusively that metallic magnesium has a distinct inhibiting effect on the growth of bacteria. This bacteriolytic property was not so marked as to indicate a violently destructive action. It seemed rather to be an inhibiting action. The experiments showed also that magnesium possessed distinct hemolytic and proteolytic properties. Hemolysis and proteolysis are undoubtedly responsible for the frequent instances of accumulation of serum in wounds sutured with magnesium wire. No adequate method could be devised whereby the evolution of hydrogen gas could be delayed or stopped. Similarly, no method could be devised to counteract the undesirable hemolytic and proteolytic effects of magnesium.

Arkansas Medical Society Journal, Little Rock

20: 161-172 (March) 1924

Sinus Arrhythmia; Auricular Fibrillation; Ventricular Premature Beats. N. S. Stern, Memphis.—p. 161.

Boston Medical and Surgical Journal

190: 401-440 (March 6) 1924

*Carcinoma of Stomach. D. Cheever, Boston.—p. 401.
Résumé of Cases of Suppurative Appendicitis. G. H. Gray, Hyannis, Mass.—p. 406.
Infantile Eczema. H. C. Stuart, Boston.—p. 410.
*Eczema in Exclusively Breast-Fed Baby. E. S. O'Keefe, Boston.—p. 413.

Prognosis of Carcinoma of Stomach.—Cheever's experience with the radical operation is limited to twelve cases. There was an immediate mortality of 16.6 per cent. Six patients died of recurrence, having lived an average period of twenty-three months. One patient is living with recurrence at the end of twenty-three months. Three patients are alive and well seven years and three months after operation, six years, and six years and three months, respectively. Two of these patients have been examined and show no evidence of recurrence; the other could not present herself, but is said to be actively at work. This gives a percentage of six-year apparent cures of 25 per cent.

Eczema in Breast-Fed Infant.—According to Stuart and O'Keefe, the evidence at hand seems to indicate that eczema in the breast-fed infant is an allergic condition, due in some cases in part at least to foreign proteins in breast milk. The assumption of foreign proteins in breast milk is not, however, in itself sufficient to account for eczema in the breast fed. Sensitivity to the proteins of human milk accounts for many phenomena observed in breast-fed eczemas. Group sensitivity explains many features that appear on weaning.

Journal of Biological Chemistry, Baltimore

59: 1-242 (Feb.) 1924

*Alkalosis, Sodium Poisoning and Tetany. I. Greenwald, New York.—p. 1.
Resolution of Inactive Malic Acid into Optically Active Forms. H. D. Dakin, New York.—p. 7.
*Nutrition and Growth on Diets Deficient in Preformed Carbohydrates. T. B. Osborne and L. B. Mendel, New Haven.—p. 13.
Cell Volume and Electrical Conductivity of Blood. H. C. Gram, Philadelphia.—p. 33.
Animal Calorimetry. XXIV. Analysis of Oxidation of Mixture of Carbohydrate and Fat. G. Lusk, New York.—p. 41.
*Clinical Calorimetry. XXXV. Graphic Representation of Respiratory Quotient and Percentage of Calories from Protein, Fat and Carbohydrate. E. F. Du Bois, New York.—p. 43.
*Clinical Calorimetry. XXXVI. Graphic Method of Determining Certain Numerical Factors in Metabolism. A. M. Michaelis, New York.—p. 51.
Metabolism of Sulphur. VI. Oxidation of Cystin in Animal Organism. H. B. Lewis, H. Updegraff and D. A. McGinty, Ann Arbor.—p. 59.
*Liquor Formaldehydi for Preservation of Blood Specimens. J. C. Bock, Milwaukee.—p. 73.
*Effect of Small Breakfast on Energy Metabolism of Children. V. Bauer and K. Blunt, Chicago.—p. 77.
*Amount of Available Insulin in Pancreas of Domestic Animals. F. Fenger and R. S. Wilson, Chicago.—p. 83.
Persistence of Vitamin C in Livers of Rats on Scorbutic Ration. S. Lepkovsky and M. T. Nelson, Madison.—p. 91.
Antiscorbutic Requirement of Rat. H. T. Parsons and M. K. Hutton, Madison.—p. 97.
*Diurnal Variations in Rate of Urine Excretion for Two Hour Intervals: Associated Factors. G. E. Simpson, Montreal.—p. 107.
Specific Rotations of Hexonic and 2-aminohexonic Acids and of Their Sodium Salts. P. A. Levene, New York.—p. 123.
Preparation of α-Mannose. II. P. A. Levene, New York.—p. 129.
Optical Behavior of 2, 5-Anhydroglucose, of 2, 5-Anhydrogluconic Acid, and of 2, 5-Anhydromannonic Acid. P. A. Levene, New York.—p. 135.
Pentacetate of α-Mannose. P. A. Levene, New York.—p. 141.
Isomeric Methyl Diacetone Mannoses. P. A. Levene and G. M. Meyer, New York.—p. 145.
Studies of Autolysis. X. Autolysis of Muscle. K. K. Chen and H. C. Bradley, Madison.—p. 151.
*Experimental Rickets. XXIV. Effect of Extracts of Plant Tissues on Florid Rickets. P. G. Shipley, E. M. Kinney and E. V. McCollum, Baltimore.—p. 165.
*Id. XXV. Antirachitic Effect of Certain Oils. P. G. Shipley, E. M. Kinney and E. V. McCollum, Baltimore.—p. 177.
Enzyme Action. XXV. Comparative Lipase and Protease Actions of Flexner-Jobling Rat Carcinoma and of Different Rat Tissues. K. G. Falk, H. M. Noyes and K. Sugiura, New York.—p. 183.
Id. XXVI. Comparative Lipase and Protease Actions of Different Beef Tissues. K. G. Falk, H. M. Noyes and K. Sugiura, New York.—p. 213.
Id. XXVII. Comparative Enzyme Actions of Tissue Mixtures and of Tumor-Tissue Mixtures in Relation to Comparative Enzyme Actions of Tissue and of Tumor Extracts Alone. K. G. Falk, H. M. Noyes and K. Sugiura, New York.—p. 225.
Effect of Fasting (and Refeeding) on Calcium and Inorganic Phosphorus in Blood Serums of Normal and Rachitic Rats. A. W. Cavins, Baltimore.—p. 237.

Alkalosis, Sodium Poisoning and Tetany.—It seems to Greenwald that the work of Denis and von Meysenbug can only be regarded as a confirmation of his conclusion that the convulsions after injections of sodium carbonate or bicarbonate are not due to alkalosis but to "sodium poisoning."

Effect of Diets Deficient in Preformed Carbohydrates on Nutrition.—The reputed rôle of carbohydrate in metabolism is discussed by Osborne and Mendell, particular reference being made to the so-called ketolytic or antiketogenic function of sugar and also to the profound untoward effects of hypoglycemia. An outline is given of methods employed in nutrition experiments in which the amount of available preformed carbohydrate was so small as to be undetectable. The food contained various proteins and fats in widely different proportions, along with a suitable inorganic mixture and suitable sources of vitamines A and B.

Calculating Calories.—Triangular graphs have been constructed by Du Bois which make it possible to determine rapidly the percentage of calories furnished by protein, fat and carbohydrates, and to follow the changes in metabolism caused by disease or by the administration of various diets.

Numerical Factors in Metabolism.—Michaelis' paper presents charts primarily constructed to facilitate calculation by using Du Bois' charts.

Preserving Blood Specimens with Liquor Formaldehydi.—It does not seem advisable to Bock to use the average liquor formaldehydi for the preservation of blood specimens intended for blood sugar determination.

Effect of Small Breakfast on Energy Metabolism.—To ascertain whether basal metabolism determinations on children may safely be made at noon instead of before breakfast, seven children were repeatedly observed by Bauer and Blunt early in the morning and again on the same day about four hours after a small breakfast. The average oxygen consumption at the later hour was only 0.6 per cent. higher than before the meal. The use of the noon hour is, therefore, considered safe as a routine procedure, provided the breakfast does not exceed 470 calories, with not more than 14 gm. protein, and is eaten at least four hours before the metabolism observation.

Insulin in Pancreas of Domestic Animals.—Fenger and Wilson state that the amount of insulin in the pancreas of domestic animals varies from 1,500 to 2,200 rabbit units per kilogram of fresh glands. The average yield approximates 1,800 units from cattle, hogs and sheep. The methods employed in separating and standardizing the purified insulin are described in detail. The physical and chemical characteristics of the purified insulin are pointed out.

Diurnal Variations in Urine Excretion.—Simpson's study of two hour urines during twenty-four hours or more showed: When 100 or 200 c.c. of water are given hourly, there is a negative water balance during part of the day, and a retention of water at night. Associated with the development of this retention period is a large increase in the hydrogen ion concentration and also in titratable acidity and ammonia in urine. The retention period ends about 7 a. m. on the second morning. At this time hydrogen ion concentration does not altar appreciably, and titratable acidity shows no marked changes, while ammonia excretion increases.

Effect of Extracts of Plant Tissues on Rickets.—Ether, alcohol and acetone extract from alfalfa leaves a substance which causes the healing of rickets in rats. The amount of extract used corresponded to 250 gm. alfalfa meal per kilogram of food. Healing began before the seventh day of administration and was practically complete in thirty-three days. The results given by feeding ether extracts of cabbage were either negative or doubtful as regards the healing of experimental rickets. Ether extracts of dry spinach, Brussels sprouts, cabbage, celery, tomato and sweet potato were given in amounts equivalent to feeding 250 gm. per kilogram of ration to animals with rickets without any effect on the rachitic process in the bones. These vegetables, therefore, in a dried state are free from, or contain negligible amounts of the antirachitic vitamin.

Antirachitic Effect of Oils.—Alcoholic extracts of butter fat were found by Shipley, Kinney and McCollum apparently to contain appreciable amounts of antirachitic substance. The same substance is present in oil of cloves.

Journal of Comparative Psychology, Baltimore

4: 1-121 (Feb.) 1924

Inheritance of Maze-Learning Ability in Rats. E. C. Tolman, Berkeley, Calif.—p. 1.
Effects of Emotional Stimuli on Gastro-Intestinal Tone. D. Brunswick, Baltimore.—p. 19.
Study of Conversations. M. H. Landis and H. E. Burtt, Columbus, Ohio.—p. 81.
Static Equilibrium. Influence of Height, Weight and Position of Feet on Amount of Sway. F. S. Fearing, University, Calif.—p. 91.

Journal of Immunology, Baltimore

9: 1-73 (Jan.) 1924

*Human Hypersensitiveness Induced by Very Small Amounts of Horse Serum. C. B. Hooker, Boston.—p. 7.
Human Hypersensitiveness to Whole Horse Serum or Serum Globulins Following Diphtheria Toxin-Antitoxin Injections. W. H. Park, New York.—p. 17.
Antimeningococcus Serum. I. Production of Serum. I. R. Mörch, Copenhagen, Denmark.—p. 25.
Isohemagglutinins in Rabbits. L. H. Snyder.—p. 45.
Blood Interrelationship of Horses, Asses and Mules. I. S. N. Walsh, St. Louis.—p. 49.
Hemagglutination in Horses. I. S. N. Walsh.—p. 57.

Hypersensitiveness Induced by Small Amounts of Horse Serum.—Following toxin-antitoxin injections a noteworthy proportion of human subjects became hypersensitive to horse serum as shown by specific endermal reactions. The pertinence of this observation to serum therapy in general is discussed by Hooker. To avert the disadvantageous influence which such induced hypersensitiveness is likely to exert on the use of therapeutic horse serums, it is recommended that some other animal be chosen for the production of antitoxin which is destined for use in toxin-antitoxin mixtures.

Journal of Industrial Hygiene, Boston

5: 399-446 (March) 1924

Mercurialism in Quicksilver Production in California. A. Hamilton, Boston.—p. 399.
Seasonal Fluctuations in Frequency of Industrial Accidents. H. D. Kitson and C. Campbell.—p. 508.
Bakers' Itch. A. C. Parsons, London.—p. 410.
Sickness Insurance Statistics. L. Teleky, Düsseldorf.—p. 434.

Journal of Laboratory and Clinical Medicine, St. Louis

9: 289-360 (Feb.) 1924

*Relationship of Chronic Endocervicitis to Focal Infection: Chronic Arthritis. L. M. Moench, Rochester, Minn.—p. 289.
*Effects of Injection of Gum Acacia Solution and of Transfusion of Blood on Oxidative Power of Brain as Indicated by Alterations in Temperature After Injection of Epinephrin. G. W. Crile, A. F. Rowland and S. W. Wallace, Cleveland.—p. 309.
*Proposed Buffered Physiologic Solution of Sodium Chlorid to be Used in Serology. E. C. Mason and A. H. Sanford, Rochester, Minn.—p. 313.
*Hemolytic Streptococcus of Human Origin in Relation to Heating and Freezing in Milk Industry. T. D. Beckwith and B. U. Eddie, Berkeley, Calif.—p. 316.
*Effects of Intravenous Injections of Acriflavine. H. Spencer, New Haven, Conn.—p. 322.
Substitute (Delphinium Consolida) for Curare in Classroom Experiments. N. Kleitman and R. A. Crawford, Chicago.—p. 326.
*Method for Determination of Blood Urea Nitrogen. W. G. Karr, Philadelphia.—p. 329.
*Standardization of Pituitary Extract by Oxytoxic Method; Apparatus for Controlling Temperature. E. E. Swanson, Indianapolis.—p. 334.
*Significance of Negative Blood Cultures. A. H. Straus, Richmond, Va.—p. 345.
Demonstrating Gastro-Intestinal Movement. H. P. Rush, Portland, Ore.—p. 348.

Cervix Uteri Focus of Infection in Arthritis.—The anatomic and pathologic facts reviewed by Moench point to the structural predisposition of the cervix uteri to act as a chronic focus. Bacteriologic and animal experiments indicate the special rôle played by the streptococcus with regard to pathogenicity, and the relative unimportance of the more saprophytic flora. Evidence is presented to show the affinity of cervical streptococci for joint tissues. A marked percentage increase in joint localization in a series of selected cases of arthritis, suggests relationship with Rosenow's elective localization theory in focal infection. Clinical and experimental evidence is offered to support such relationship. The antigenic properties of the cervical streptococci suggest low virulence but high specificity of these strains. Evidence is offered to suggest a parallelism between the virulence of the cervical streptococci, and their biologic conditions of growth. Experiments in vitro suggest the bactericidal, as well as the bacteriostatic effects of anilin dyes for cervical organisms. A modification of Kennedy's interstitial injection method is offered on the selective bacteriostatic principle for the elimination of the cervical focus.

Effect of Gum Solution and Transfusion on Brain.—A comparison of the response of the brain to the injection of gum acacia solution and to the transfusion of whole blood indicates that the oxidative power of the brain is markedly diminished by the gum acacia solution while it is increased by the transfusion of whole blood.

Buffered Salt Solution Used in Serology.—Mason and Sanford propose a buffered physiologic sodium chlorid solution having a definite and constant composition, the formula being 7 gm. sodium chlorid, 1.7 gm. secondary sodium phosphate (2 molecules of water) and 0.2 gm. primary potassium phosphate for each liter of double distilled water. The combination yields a solution with a p_H of 7.4 to 7.8 and a salt concentration of 8.9 gm. for each liter. Such solution has been giving uniform and constant results in the author's work.

Hemolytic Streptococcus of Human Origin in Milk.—Beckwith and Eddie found that hemolytic streptococcus of human

origin in milk is relatively resistant to pasteurization. The same is true when it occurs in ice cream stock mixture. The organism when grown in a lesion for purposes of multiplication is slightly more susceptible to the effects of heat than when cultivated repeatedly in the test tube. Should this streptococcus survive pasteurization in the stock syrup used in the ice cream industry, it nevertheless is killed fairly readily by the high sugar content. It is uninfluenced by freezing temperature at —2 C.

Effects of Intravenous Injections of Acriflavine.—Spencer says that acriflavine, in a concentration of 1:2,000, or lower, in physiologic solution of sodium chlorid, has no agglutinative action on human erythrocytes. In vitro, acriflavine in concentrations greater than 1:8,000 in saline solution is lytic for human erythrocytes. In vivo, acriflavine injections, to the amount of 0.1 gm. per kilogram of body weight (rabbit) induces a slight but transitory reduction in the number of erythrocytes, and a considerable increase in the number of leukocytes. A single intravenous injection, or multiple injections, of the tolerated dose does not lead to an increase in the bactericidal action of the serum when tested against *Staphylococcus aureus*. White mice injected simultaneously with the tolerated dose of acriflavine and the minimal lethal dose of virulent pneumococci are not protected.

Determination of Blood Urea Nitrogen.—Blood urea nitrogen is determined by Karr in the tungstic acid filtrate by urease conversion, nesslerization and colorimetric comparison without removal of the ammonia from the digestion mixture. An artificial standard solution is used which is composed of a mixture of iron, cobalt and nickel chlorids, previously standardized against a known urea solution. The results of estimations by this method are accurate, comparing favorably with those of the Van Slyke and Cullen, and Folin and Wu methods. The method is simple and numerous determinations can be completed in short time. Hence, the method should be of particular value to the hospital laboratory where the routine requires simplicity of manipulation and calculation, and conservation of time and apparatus.

Standardizing Pituitary Extract.—A method is described by Swanson by which it is possible to maintain a constant temperature which increases the accuracy of the oxytoxic assay. It is possible to prepare a uniform desiccated powder from the pituitary gland which may be used as a standard to compare different lots of pituitary extract. By using duplicate apparatus or apparatus with multiple units, it is possible to utilize more than one horn of the uterus, and to increase the number of tests of a sample in a given time.

Significance of Negative Blood Cultures.—Evidence presented by Straus shows that defibrinated human blood, or the serum is bactericidal for *B. typhosus*. Bouillon in low dilutions is not a satisfactory medium for cultivating organisms of the typhoid-colon group from blood. Satusfactory blood culture for a large variety of organisms can be made by using two mediums; namely, bile for the typhoid-colon group, and beef infusion bouillon for the streptotoccus, and pneumococcus.

Journal of Urology, Baltimore

11: 111-204 (Feb.) 1924

Historical Sketch of Surgical Treatment of Vesical Calculus. H. L. Sanford, Cleveland.—p. 111.
*Circulatory Changes in Hydronephrosis, Caseocavernous Tuberculosis, and Polycystic Kidney. F. Hinman and D. M. Morison, San Francisco.—p. 131.
Preliminary Ligation of Renal Vessels as Aid to Nephrectomy. D. N. Eisendrath and B. Portis, Chicago.—p. 143.
Solitary Unilateral Large Serous Cysts of Kidney: Two Cases; Review of Literature. C. M. Harpster, T. H. Brown and A. Delcher, Toledo.—p. 157.
*Gonococcal Infection of Kidney: Criteria for Diagnosis. F. P. Johnson and J. H. Hill, Baltimore.—p. 177.
Bacteriuria. H. G. Greditzer, St. Louis.—p. 189.
Reconstruction of Portion of Male Urethra by Means of Fascia Lata Transplant. E. C. Brenner, New York.—p. 197.
*Unique Anomaly of Ureters. G. MacGowan and G. D. Maner, Los Angeles.—p. 199.

Circulatory Changes in Hydronephrosis, Renal Tuberculosis and Polycystic Kidney.—Stereoscopic roentgen-ray studies of the kidney were made by Hinman and Morison after injection with barium sulphate and gelatin. They state that in hydronephrosis the circulatory changes are produced by mechanical displacement acting by compression or stretching according to the course of the vessels in relation to the direction of force. As the larger vessels become attenuated by stretching there is diminished flow of blood to and from the cortex, producing a partial anemia. This tends to lessen the normal tissue tone and favors a relaxation which is readily taken advantage of by the process of distention. In caseocavernous tuberculosis the factor of infection is present which not only produces changes in the vascular walls, thereby impairing the tissue vitality, but also provides the means of obstruction and creation of a secondary mechanical hydronephrosis. The secondary changes may almost completely mask the original picture. The circulatory changes in polycystic kidney appear to be mechanical, involving chiefly the finer cortical vessels by displacement and compression. The larger trunks show little departure from the normal arrangement. In general distribution the vasculature simulates the fetal type.

Gonococcal Kidney Infection.—A case of gonococcal infection is reported by Johnson and Hill in which the organism was proved by fermentation tests to be the gonococcus. The criteria for identifying the gonococcus are discussed and the need of bacteriologic proof in such cases is emphasized.

Anomaly of Ureters.—In MacGowan and Maner's case the left ureter, descending in its normal course, emerged as a tube and continued across the trigone, where it became attached to the bladder wall, 1 cm. to the right of the median line and continuous with the right ureter. In other words, the ureters descending from each kidney in their normal course pierced the bladder and became continuous one with the other in the form of a loop across the trigone, underneath which the index finger could easily be inserted. There was a meatus on the right side externally as the ureter emerged from the bladder wall. On the left side, the meatus was on the anterolateral aspect of the tube, 1 cm. distal to the side where the ureter pierced the bladder wall. The loop across the trigone resembled a fleshy fibrous cable across the base of the bladder, which was long enough to reach to the neck of the bladder, and perhaps accounted to some extent for the patient's great residual urine. This loop from the left was patulous to a probe and contained mucous membrane to a point 1 cm. beyond and to the right of the anomalous meatus. Beyond this point it was impervious to the smallest probe. A cross section suggested complete occlusion by inflammatory process. This was in keeping with occlusion of the right ureter for several centimeters between the bladder and the right kidney—autonephrectomy on the right side, with an atrophic but distinctly tuberculous kidney.

Medical Journal and Record, New York

119: 229-280 (March 5) 1924

*Insulin in Diabetes. H. J. John, Cleveland.—p. 229.
*Estimating Small Amounts of Glucose in Urine in Diabetic Cases as Guide to Insulin Therapy. J. R. Williams and G. U. Casey, Rochester, N. Y.—p. 237.
Relation of Teeth, Tonsils and Intestinal Toxemias to Diseases of Eye. G. H. Bell, New York.—p. 239.
Penetrating Injuries to Eye in Industrial Occupations. F. Allport, Chicago.—p. 241.
Gallbladder Disease; Operative Treatment and Complications. M. Behrend, Philadelphia.—p. 245.
*Drowsiness. J. A. Kearney, New York.—p. 247.
Congenital Dislocation of Hip. E. H. Smith, San Francisco.—p. 248.
Treatment of Acute Middle Ear Infections and Prevention of Mastoiditis. A. I. Schwartz, New York.—p. 250.
Nonspecific Therapy in Erysipelas. E. H. Ahlswede, Buffalo.—p. 252.
Surgical Treatment of Ozena. J. A. Glassburg, New York.—p. 253.
Artery Forceps for Tying Off Bleeders in Deep Narrow Cavities. A. Kahn, New York.—p. 255.

SUPPLEMENT

Factors Resulting in Lowered Mortality of Prostatectomy. H. Bugbee, New York.—p. xxxiii.
Chancre of Cheek. H. Goodman, New York.—p. xxxvi.
Prostatic Obstruction. J. A. Hawkins, Pittsburgh.—p. xxxviii.
Bladder Disturbances of Nerve Lesion Origin. M. F. Campbell, New York.—p. xl.
Stricture of Ureter. N. P. Rathbun, Brooklyn.—p. xliii.
Male Climacterium. M. Thorek, Chicago.—p. xlvi.

Relation of "Colds" to Diabetes.—John has noted that the onset of a cold in the presence of diabetes causes an immediate

rise of the blood sugar content which, especially in younger patients, tends to lower permanently the carbohydrate tolerance. This observation indicates that a cold may be considered as a definite causative factor of diabetes in patients in whom a prediabetic condition is present, that is, who have a lowered carbohydrate tolerance.

Estimating Small Amounts of Glucose in Urine.—The plan employed by Williams and Casey with some success assumes that the patient is under treatment, that diet and the insulin dose have been carefully estimated and that the patient is at home under the observation of the family physician. When sugar is found in either a single or twenty-four hour specimen, the patient is instructed to save each voiding separately in clean fruit jars for twenty-four hours and a quantitative estimation of the sugar present is determined by a simple adaptation of the quantitative method first suggested by Benedict and simplified by Joslin for the use of nurses. The authors have further simplified the procedure by using a special pipet made for them, and by the use of a table of values which obviates some of the mathematical calculations. The method is well adapted for the estimation of small amounts of sugar such as is found during the day in the urine of diabetics under insulin treatment.

Ocular Causes of Drowsiness.—The usual ocular factors responsible for drowsiness in Kearney's experience are: (*a*) roughened and uneven surfaces of the conjunctiva from whatever cause unattended by pain in the eyes; (*b*) marked reduction of vision in both eyes unattended by pain in the eyes.

New Orleans Medical and Surgical Journal

76: 409-450 (March) 1924

Nephrolithiasis as Complication of Pregnancy. A. P. Heineck, Chicago.—p. 409.
*Conservatism in Dealing with Pelvic Infection. T. E. Sellers, New Orleans.—p. 412.
*Heartburn. A. L. Levin, New Orleans.—p. 416.
Sensitization of Breast-Fed Infants to Food Proteins in Mother's Milk: Cases. L. von Meysenbug, New Orleans.—p. 421.
Mercurosal in Syphilis. C. E. Verdier, New Orleans.—p. 425.
Tumors of Bone. F. W. Parham, New Orleans.—p. 426.
Scopolamin. E. House, Ferris, Tex.—p. 431.
Stem Pessary in Dysmenorrhea and Sterility. H. E. Miller, New Orleans.—p. 437.

Treatment of Pelvic Infections.—Sellers pleads for long rest treatment and more colpotomies. He says, they will reduce the number of abdominal sections and make it possible to conserve more tubes and ovaries.

Heartburn.—Levin believes that a toxic agent, biliary or otherwise, is the primary causative factor. The irritation primarily is probably hematogenous, producing an hyperesthesia. A reverse current carries the sensation upward. In his opinion, toxic hyperesthesia (gastric, esophageal, pharyngeal, buccal, lingual), is a better term than pyrosis or cardialgia.

New York State Journal of Medicine, New York

24: 283-328 (March 7) 1924

Abnormalities of Urinary Tract in the Male. O. S. Lowsley, New York.—p. 283.
*Epithelioma of Tonsil. L. H. Smith, Buffalo.—p. 289.
Hyalitis of Indeterminate Etiology. J. J. O'Brien, Schenectady.—p. 292.
*Colitis Therapy. C. W. Lieb, New York.—p. 295.

Epithelioma of Tonsils.—Smith reports on forty cases of epithelioma of the tonsil and adjacent structures. Twenty-three patients received combined treatment, five, fractional radiations and twelve, radium packs. Three patients are clinically well and have performed regular duty for from two to three and one-half years. Many others are doing their work although the growth has not disappeared and cervical metastases are palpable. Surgery has not offered these patients much hope; radical operations are attended with a high mortality and recurrences are common.

Therapy of Colitis.—The basic principle in the treatment of colitis advocated by Lieb is preventing activating sugars from reaching the bowel. Gastro-intestinal immobilization, i. e., physiologic rest, with a low residue diet by mouth or by jejunal feeding, best produces a carbohydrate-free and peristaltic-free colon. Hydraulic dilatation, with temperature and pressure scientifically regulated, is of value in counteracting colonic spasticities, local or general. Diathermy has a definite place in the treatment of colitis (*a*) by relieving colic, (*b*) by producing splanchnic hyperemia and (*c*) by stimulating cellular activity. Colonic bacteriolytic therapy, produced chemically or by utilizing the d'Herelle principle, followed by implantation of colon bacillus, has a definite place in the cure of colitis.

24: 329-378 (March 14) 1924

*Anorexia in Children. T. W. Clarke, Utica, N. Y.—p. 329.
Alienists in Criminal Trials. J. F. W. Meagher, Brooklyn.—p. 334.
Problem of Stutterer. J. S. Greene, New York.—p. 337.
Nurse Training as Educational Project. A. T. Lytle, Buffalo.—p. 340

Anorexia in Children.—Clarke believes that diseased tonsils are the most common of all causes of anorexia. However, in children, appendicitis should be kept in mind.

Ohio State Medical Journal, Columbus

20: 137-194 (March) 1924

New Deep Roentgen-Ray Therapy of Malignancy U. V. Portmann, Cleveland.—p. 141.
*Marked Dilatation of Esophagus in Cardiospasm. P. P. Vinson, Rochester, Minn.—p. 147.
Acute Catarrhal Laryngitis. H. G. Beatty, Columbus.—p. 149.
Postoperative Thrombophlebitis. W. H. Fisher, Toledo.—p. 152.
Prevention of Heart Disease a Public Health Problem. W. H. Peters, Cincinnati.—p. 154.
Epidemic of Head Infections; Relation to Nasal Accessory Sinuses. M. Metzenbaum, Cleveland.—p. 159.

Dilation of Esophagus in Cardiospasm.—Four cases are cited by Vinson. There was nothing unusual in the histories of these cases that would differentiate them from any well marked case of cardiospasm; the roentgenograms were the only feature of unusual interest. Relief from dysphagia was obtained by all the patients following dilation of the cardia with a hydrostatic dilator which was guided into the cardia by a previously swallowed silk thread.

Oklahoma State Medical Association Journal, Muskogee

17: 30-56 (Feb.) 1924

History and Etiology of Diabetes Mellitus. E. L. Yeakel, Shawnee.—p. 30.
Pathologic Anatomy of Pancreas in Diabetes Mellitus. G. O. Hartman, Enid.—p. 31.
Diseases of Liver. C. W. Heitzman, Muskogee.—p. 33.
Constitutional Treatment of Delayed Recovery of Open Fractures. F. S. Clinton, Tulsa.—p. 34.
Internal Podalic Version: Personal Experience with Potter Method. L. Dorsett, St. Louis.—p. 34.
Insufflation Test as Diagnostic and Therapeutic Agent in Sterility. P. N. Charbonnet, Tulsa.—p. 36.

Philippine Islands Medical Association Journal, Manila

4: 1-38 (Jan.) 1924

Insulin in Diabetes Mellitus. T. D. Fabiaña, Kansas City, Kan.—p. 1.
*Rupture of Urinary Bladder During Puerperium. B. Roxas and G. Rustia, Manila.—p. 6.
Retrobulbar Cellulitis. Three Cases. V. C. Alcantara, Manila.—p. 8.
Early Medicine in Philippines. A. Villegas, Manila.—p. 11.

Rupture of Bladder During Puerperium.—Roxas and Rustia report the case of a woman who noticed that her abdomen was gradually becoming enlarged; on the third day she developed fever which subsided two days later. She was then undergoing daily massage of the abdomen and lumbar region by the midwife. She observed that after each massage she could pass a greater amount of light colored urine. A week later, while suffering very much from distension of the abdomen, the midwife massaged her abdomen so forcibly that the patient suddenly felt something burst within. Almost immediately the patient's condition became worse; the abdomen became more distended, painful and tender; perspiration was profuse; the body was cold all over and breathing was labored. The bladder was catheterized and about 4 liters of bloody urine was withdrawn, which caused the abdominal distension to disappear almost entirely. Rupture of the bladder was suspected, but operation could not be done on account of the condition of the patient. Heart stimulants, protoclysis and hypodermoclysis were of no avail. At the necropsy there was found a rupture of the bladder 3 inches in length.

Radiology, St. Paul

2: 121-196 (March) 1924

Treatment of Primary Inoperable Carcinoma of Breast by Radiation. B. J. Lee and R. E. Herendeen, New York.—p. 121.
Radiation Sickness. H. Schmitz, Chicago.—p. 137.
*Preoperative Radium and Roentgen-Ray Treatment of Carcinoma of Breast. H. H. Bowing, Rochester, Minn.—p. 143.
Roentgen-Ray Treatment of Breast Carcinoma. E. L. Jenkinson, Chicago.—p. 151.
Treatment of Cancer of Breast. J. T. Stevens, Montclair, N. J.—p. 156.
Practical Aspects of Roentgen-Ray Measurement; Standard Unit of Dosage. H. N. Beets and R. A. Arens, Chicago.—p. 172.

Preoperative Radiotherapy of Breast Carcinoma.—Four cases of inoperable carcinoma of the breast are discussed by Bowing from the standpoint of initial response to radiation, gross and microscopic tissue changes, and treatment. Two cases were massive inoperable carcinomas of the breast, the third was an operable primary growth with metastasis to the right and left axillary glands, and the fourth an easily operable primary growth with metastasis to axillary glands, and associated carcinoma of the fundus of the uterus, questionably operable. Bowing believes that allowing time for adequate radiation treatment and complete tissue changes before operation should reduce the number of cases of local recurrence, and almost eliminate the possibility of dissemination through surgical manipulation.

Texas State Journal of Medicine, Fort Worth

19: 535-590 (Feb.) 1924

Nephritis. T. E. Scott, El Paso.—p. 545.
*Pyelitis. H. L. Cecil, Dallas.—p. 551.
*Renal and Ureteral Calculi. E. H. Bursey, Fort Worth.—p. 554.
Newer Diagnostic Methods in Study of Kidney. C. H. McCollum, Fort Worth.—p. 557.
*Tuberculosis of Testicle; Relation to Tuberculosis of Other Genitalia. F. S. Schoonover, Jr., Rochester, Minn.—p. 561.
Local Anesthesia in Urologic Surgery. A. O. Singleton, Galveston.—p. 565.
Suprapubic Prostatectomy; Seventy Cases. L. W. Pollok, Temple.—p. 568.
History and Progress of Medicine. B. G. Prestridge, Alvarado.—p. 572.
Modern High Tension Living: Relation to Human Mechanism. J. R. Lehman, Dallas.—p. 573.
Removing Burdens First in Treating Heart. J. S. Lankford, San Antonio.—p. 575.
Cleft Palate. H. L. D. Kirkham, Houston.—p. 577.
*Umbilical Cord Freak. H. G. Fleming, Denton.—p. 579.

Ureteral Obstruction Cause of Pyelitis.—Cecil contends that a large proportion of cases of pyelitis have their underlying cause in ureteral obstructions. These obstructions can be diagnosed with accuracy only with the cystoscope and by ureteral catheterization. They must be relieved or treatment is of no avail. These conditions can usually be cured without operation.

Focal Infection Causes Renal Calculi.—Of forty cases analyzed by Bursey, focal infection was traced in twenty-seven. Pyelitis was a complication in thirty-two cases. Bursey is an adherent to the bacterial origin of kidney and ureter calculi.

Tuberculosis of Testes.—The basis of Schoonover's paper are forty-six specimens of testes removed because of tuberculosis. He says that tuberculosis of the testes is but one manifestation of a general tuberculous infection. Tuberculosis of the kidney and of the genital tract are often associated. The epididymis is commonly the primary focus of tuberculosis in the genital tract. The testis is usually infected from the epididymis, but may be infected through the blood stream in general miliary tuberculosis. The disease is first seen in the body of the testis, and is most intense around the hilus. The spermatogenic cells are destroyed by the toxin and by obstruction of the ducts. The interstitial cells which elaborate the testicular hormone seem to possess some power of regeneration during the healing of the disease. Healing of the tuberculous testis does occur, but may be only a temporary arrest of the process of destruction. Conservative surgery is indicated in this disease, with few exceptions.

Knots in Umbilical Cord.—In Fleming's case there were two knots in the cord, one a figure of eight, about one foot from the placental end, the other a single knot about the same distance from the umbilical end. The cord itself was unusually long—about 4 feet, and the knots were loosely tied. The child was a large healthy boy—the seventh son.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

36: 93-138 (March) 1924

Wassermann Reaction in Syphilis. W. Fox.—p. 93.
Case of Argyria. D. Firth and G. A. Harrison.—p. 105.
Concentrated Carbon Arc Light (Finsen) in Xanthelasma Palpebrale. S. Lomholt.—p. 112.

British Medical Journal, London

1: 361-412 (March 1) 1924

*Nature of Cell Impulse. J. Mackenzie.—p. 361.
*Occlusion of Posterior Inferior Cerebellar Artery. A. Ramsbottom and J. S. B. Stopford.—p. 364.
*Sprue and Pernicious Anemia. B. Bramwell.—p. 365.
*Surgical Anatomy of Femoral Hernia. H. S. Souttar.—p. 367.
*Epithelioma of Skin After Prolonged Exposure to Creosote. H. A. Cookson.—p. 368.
Reinflations in Artificial Pneumothorax Treatment. L. S. T. Burrell.—p. 368.
*Two Cases of Intestinal Obstruction. B. H. Pidcock.—p. 369.
Suppurative Otitis Media Treated by Zinc Ionization. T. B. Jobson.—p. 371.
Toxemias of Pregnancy. F. Cook.—p. 372.
Elephantiasis Nostras After Lympatic Injury. J. A. White.—p. 376.
Pedunculated Tumor of Tonsil. F. P. Sturm.—p. 377.

Nature of Cell Impulse.—Mackenzie asserts that little advance has been made in the knowledge of living matter beyond the accumulation of an enormous mass of reactions or end-results. The reason for this has been the absence of a knowledge of a vital force comparable to the forces of gravity, electricity and magnetism.

Occlusion of Posterior Inferior Cerebellar Artery.—Anatomic investigation has proved that the more caudal part of the spinal nucleus and tract is most constantly supplied by the posterior inferior cerebellar artery, and that, when the bulbar branches of this vessel are reduced in number, it is the cephalic extremity which escapes. In the case reported by Ramsbottom and Stopford it is significant that the sensory loss was confined to the upper part of the face, which confirms the opinion expressed by Spiller that the ophthalmic division of the fifth nerve descends to a lower level than the other two branches, and that the fibers of the inferior maxillary division pass to the cephalic part of the nucleus. On anatomic grounds it appears that in this case the bulbar branches of the artery were less numerous than usual, which leads to a reduction in a cephalic direction of the retro-olivary region generally supplied. This results in escape of the upper part of the nucleus ambiguus as well as the cephalic extremity of the spinal nucleus and tract. Since no paralysis of the laryngeal muscles was found, this case supports the view that it is the upper part of the nucleus ambiguus which supplies fibers for the innervation of the muscles of the larynx, while the caudal part gives origin to the efferent fibers to the palate and striated muscles of the pharynx.

Sprue and Pernicious Anemia.—Bramwell sees a close resemblance between sprue and pernicious anemia. Both diseases appear to be caused by a blood destroying toxin from the gastro-intestinal tract, and the clinical history of each is similar. He suggests that in cases of Addison's (pernicious) anemia a trial should be made of parathyroid extract. He had had good results from its use.

Surgical Anatomy of Femoral Hernia.—Souttar says in most cases a femoral hernia is characterized by the appearance of a soft, spherical swelling in the angle between Poupart's ligament and the tendon of the adductor longus. Gimbernat's ligament is not directly concerned in the strangulation of a femoral hernia, and its division serves no useful purpose, and may be dangerous.

Creosote Causes Epithelioma of Skin.—Cookson cites an instance of epithelioma of the skin of the right hand in a worker exposed for many years to creosote. He had also a few warty growths on the left arm, one of which presented evidence pointing to possible early malignant changes. Cookson believes it to be fairly certain that creosote was the cause of the malignant growth and subsequent death of the man. The internal organs showed numerous secondary deposits of cancer. A large deposit involving the wall of the heart pro-

jected into its interior. The glands in the right armpit were enlarged and invaded by malignant disease.

Intestinal Obstruction Caused by Fold of Broad Ligament.—Pidcock investigated the bodies of ten adult women, all probably parous, and in every case it was possible to stretch the round ligament forward and demonstrate a thin, apparently avascular fold of peritoneum joining it to the main part of the broad ligament. On no occasion did it require any real force to perforate this "mesoligamentum teres" with the finger. A possible cause of this condition was that, as the result of recent pregnancy, all structures connected with the uterus were relaxed and in some manner a coil of intestine had ruptured this mesoligamentous fold, perhaps when passing into the inguinal sac. After reduction, the coil would be left lying under the round ligament, a condition favorable for an internal strangulation to occur at any moment.

Edinburgh Medical Journal

31: 125-220 (March) 1924

Diagnosis of Renal Tuberculosis. F. K. Smith.—p. 125.
Sanatorium in Tuberculosis Scheme. J. M. Johnston.—p. 132.
Treatment of Surgical Tuberculosis. A. Mitchell.—p. 140.
*Tuberculin in Diagnosis and Treatment of Tuberculosis. R. Philip.—p. 148.
Tuberculosis Problem from Experimental and Comparative Standpoint. T. Smith.—p. 176.
Methods of Treatment of Tuberculosis. A. F. Hewat.—p. 182.
Maternal Mortality. W. L. Burgess.—p. 199.
Maternal Morbidity. R. C. Buist.—p. 208.

CASE REPORTS

Acute Myeloblastic Leukemia. R. A. Fleming and J. Davidson.—p. 37.
Case of Aplastic Anemia. R. A. Fleming and J. Davidson.—p. 41.
Complement-Fixation Test in Diagnosis of Tuberculosis. A. Nimmo-Smith and F. Hewat.—p. 46.
Multiple Arthritis in Infant Following Ophthalmia Neonatorum. M. H. MacNicol.—p. 67.

Tuberculin in Diagnosis and Treatment of Tuberculosis.—The conclusion formed by Philip is that a tuberculin is likely to be serviceable in proportion to the closeness of its relationship to the tubercle bacillus and the directness of its mode of production. The simpler the constitution of the culture medium on which the tubercle bacillus is grown, the more likely will the first of these conditions be fulfilled. On that account the tuberculin of Béraneck is recommended by Philip for therapeutic purposes. The two tuberculins which he uses most commonly—both for diagnosis and treatment—are Koch's original tuberculin and Béraneck's tuberculin, in varying excipient and dilution, according to the nature of the case and the purpose in view. Philip says that the diagnostic test when properly carried out, affords a demonstration of the extent and character of the tuberculous involvement which is remarkably precise. Of the risks cited by critics of tuberculin, he has seen none, when the tests have been competently performed. The continuous use of tuberculin in the treatment of suitable cases has convinced him that the procedure has specific curative value. The case must be selected properly, and the dose must be graduated suitably according to the result obtained from time to time in the given case. These are details which demand judgment based on experience. A satisfactory result cannot be looked for unless efficient treatment be maintained for a sufficient length of time. Philip favors the percutaneous method of exhibition of tuberculin.

Indian Medical Record, Calcutta

43: 33-64 (Feb.) 1924

Treatment of Hernia. S. Mallaiah.—p. 33.
Etiology and Treatment of Kala-Azar. P. Ganguli.—p. 34.
Control of Kala-Azar. D. N. Banerjee.—p. 36.
Protein Sensitization, Hypersensitization and Desensitization. A. Roy.—p. 38.
Midwifery. K. Das.—p. 40.
Pancreas and Insulin. S. K. Mukherji.—p. 43.
Vitamins in Health and Disease. M. A. Wahed.—p. 47.

International Journal of Psycho-Analysis, London

5: 1-123 (Jan.) 1924

Conception of State and Social Psychology. H. Kelsen.—p. 1.
Masculinity Complex in Women. J. H. W. Van Ophuijsen.—p. 39.
Genesis of Castration Complex in Women. K. Horney.—p. 50.
Narcissism in Men and Women. J. Hárnik.—p. 66.

Journal of Laryngology and Otology, Edinburgh

39: 117-180 (March) 1924

Osseous and Cartilaginous Formations in Tonsils. I. Moore.—p. 117.
Tonsillectomy in School Clinics. J. K. Love.—p. 135.
Directoscope. C. G. R. Wood.—p. 141.

Lancet, London

1: 425-476 (March 1) 1924

Breast-Milk Feeding. C. Chisholm.—p. 425.
*Tests for Cure of Gonorrhea in Women. J. J. Abraham.—p. 429.
Autohemo-Therapy in Bacterial Infections. S. G. Billington.—p. 431.
Anthelmintic Work in Egypt. H. B. Day.—p. 435.
Case of Bacillus Pyocyaneus Infection Cured by Vaccine Treatment. H. R. Carter.—p. 437.
Case of Foot-and-Mouth Disease. A. H. Gibbon.—p. 438.
Case of Chorion-Epithelioma. J. P. Hedley.—p. 438.
Case of Trismus in Enteric Fever. J. S. Anderson.—p. 439.

Tests for Cure of Gonorrhea in Women.—Abraham asserts that the complement-fixation test, as an indication of cure, if positive when all the other tests are negative, may be neglected, and one should rely for practical purposes on tests, clinical and bacteriologic. If these tests are negative, the patient should be asked to return in two months, and the tests repeated. If again satisfactory, the same procedure should be repeated in four months. If, at the end of six months without treatment, the patient still shows no sign of return, clinical or bacteriologic, it may safely be assumed that she is cured. A year later, if a repetion of the tests is negative, she can safely resume marital life.

1: 477-528 (March 8) 1924

*Disease of Stomach; Its Surgical Treatment. J. Sherren.—p. 477.
Pulmonary Tuberculosis: Review. R. A. Young.—p. 481.
*Bilharzial Papillomatosis of Rectum. R. V. Dolbey and I. Fahmy.—p. 487.
*Postoperative Insanity. A. J. Cokkinis.—p. 488.
Preparing Hands and Gloves for Operation. G. W. Theobald and J. W. Bigger.—p. 489.
*Bed Isolation; Special Reference to Measles and Chickenpox. E. H. R. Harries.—p. 491.

Gastric and Duodenal ulcer.—Sherren emphasizes the importance of recognizing and thoroughly treating acute ulcers, so that the onset of the chronic type may be prevented, and points out that although by surgery chronic gastric and duodenal ulcer can be treated with little risk and a high percentage of cure, the aim of treatment should be to prevent their occurrence.

Bilharzial Papillomatosis of Rectum.—The symptoms of rectal bilharziasis are constant tenesmus, with the passage of blood and mucus. Treatment by tartar emetic destroys the living ova, but the papillomata and the consequent symptoms continue. Removal of the isolated papillomata by the knife or diathermy is unsuccessful. The papillomata always recur. Injections of phenol, 1:20, or various chemical agents, into the bases of the papillomata are equally unsuccessful. The only complete, thorough and permanent cure, Dolbey and Fahmy assert, is obtained by the excision of the whole tube of mucous membrane of the rectum. Lengths of from 9 to 17 inches have been removed by the authors in eight cases.

Postoperative Insanity.—Cokkinis says that in these cases the clinical condition strongly suggests a definite interruption of idea-association impulses, such as might take place as a result of minute focal hemorrhages or thromboses destroying certain association fibers in what are known as the silent areas of the brain. This etiologic hypothesis is strengthened by the possibility of vascular trauma in the cardiac and respiratory trouble experienced during the anesthesia, and by the prolonged period of coma after the operation. Such an etiologic hypothesis appears worthy of consideration in certain cases of postoperative or posttraumatic insanity.

Bed Isolation for Measles and Chickenpox.—In spite of its limitations in early measles and chickenpox, Harries considers bed isolation a valuable method for the treatment of conditions of relatively low infectivity and of noninfective conditions in the same ward. Bed isolation cannot replace small separate wards for the nursing of measles and chickenpox in their earliest phases, but in their later and less infective phases these diseases may safely be nursed under conditions of bed isolation.

Archives de Médecine des Enfants, Paris

27: 65-128 (Feb.) 1924

*Acute Pharyngitis with Pustules. A.-B. Marfan.—p. 65.
Antibodies in Tuberculous Children. Armand-Delille et al.—p. 94.
Mongolian Blue Spot at S. Paulo. C. Ferreira.—p. 101.

Pustulous Angina.—Marfan discusses the origin and symptoms of what he calls pustulous angina. The etiology is vague as yet, but it is certainly characteristic of an infection. The virus has an effect on the nerves and on the skin, too. The complications may develop as remote symptoms. This disease must be differentiated from simple aphthous stomatitis. Its prognosis is favorable.

Bulletin de l'Académie de Médecine, Paris

91: 225-248 (Feb. 19) 1924

Recent Prehistoric Discoveries. Capitan.—p. 227.
*Protein Shock in Experimental Tetanus. F. Arloing and L. Thévenot. —p. 231.
Local Results of Prophylaxis of Tuberculosis. F. Lalesque.—p. 234.
*Arthritis Deformans of the Hip Joint. Calot.—p. 245.

Protein Shock in Experimental Tetanus.—Arloing and Thévenot describe their experiments on 100 guinea-pigs, injected with tetanus virus. They observed that after injecting either a much attenuated or, on the contrary, a lethal dose, the tetanus was not influenced by the protein shock, which is not the case with moderately powerful viruses.

Arthritis Deformans of the Hip Joint.—Calot asserts that most of the so-called arthritis deformans cases are simply congenital lesions which the observers failed to identify as such. Thorough radiologic examination would throw new light on this condition.

91: 249-267 (Feb. 26) 1924

Immunization Against Diphtheria with Toxin-Antitoxin Mixture. J. Renault and P.-P. Lévy.—p. 255.
Pathogenesis of Hemorrhagic Purpura. M. R. Castex.—p. 259.
Is General Paralysis Decreasing? R. Benon.—p. 261.
*Blood Transfusion. V. Pauchet.—p. 263.

Pure Versus Citrated Blood Transfusion.—Pauchet discards preliminary citration of the blood to be transfused as this often causes very disagreeable chills in the patients. He recommends, instead, the preventing of coagulation by use of a special infusing syringe coated inside with liquid petrolatum.

Bulletin de l'Académie Royale de Médecine, Brussels

3: 627-681 (Dec. 29) 1923

*Caffein Paralysis in Frogs. M. Fredericq and Radelet.—p. 630.
Microscopy of the Living Eye and Vital Staining. Gallemaerts.—p. 635.
Alexins in the Cerebrospinal Fluid. Bruynoghe and Staquet.—p. 641.

Caffein Paralysis in Frogs.—Fredericq and Radelet established that caffein has first an exciting but, later, a paralyzing effect on the sympathetic of the frog.

Comtes Rendus de la Société de Biologie, Paris

90: 326-384 (Feb. 15) 1924

Experimental Putrid Infections. Weinberg and Ginsbourg.—p. 326.
Flocculation of Serums by Bacilli Filtrates. Weinberg et al.—p. 329.
Chloroform in Stomach with Stenosis. M. Loeper et al.—p. 331.
*Abscess Retards Aseptic Healing. A. Carrel.—p. 333.
Purin-Bases Diuresis. J. Camus and J.-J. Gournay.—p. 335.
*Stain Test of Liver Function. A. Gilbert and A. Coury.—p. 337.
Glucose in Normal Spinal Fluid. W. Mestrezat.—p. 339.
Human Origin of Dog Tuberculosis. Panisset and Verge.—p. 341.
Influence of Bile on Swine Erysipelas. Panisset and Kolda.—p. 343.
Argentophilic Liver Tumor. A. Peyron.—p. 346.
Alimentary Glycemia. H. Claude et al.—p. 349.
Distribution of Polonium After Subcutaneous Injection in Cancer Rats. A. Lacassagne and J. Lattès.—p. 352.
Nervous Changes in Myopathy Cases. Foix and Nicolesco.—p. 354.
Enterotropic Micro-Organisms. G. Sanarelli.—p. 357.
Influence of Insulin on Respiration. Matton.—p. 361.
*Insulin and Loss of Heat. A. K. Noyons et al.—p. 365.
Reaction to Besredka's Tuberculosis Antigen. Kullman.—p. 368.
Microbic Variation in Anthrax. A. Gratia.—p. 369.
"Trephocytes." A.-P. Dustin.—p. 371.
Electric Resistance of Tissues. M. Philippson.—p. 373.
Cell Anaphylaxis and Electric Resistance. Philippson et al.—p. 375.
*Action of Muscle Extract. De Vaucleroy.—p. 377.
*The Ergotamin Pupil Reaction. E. Zunz.—p. 379.
Physiology of the Cerebellum in Pigeons. F. Bremer.—p. 381.

Effect of Abscess on Distant Aseptic Cicatrization.—Carrel's experience has been that even a distant abscess certainly delays the regenerative process in wound healing.

Phenoltetrachlorphthalein for Testing Liver Function.—Gilbert and Coury commend the use of phenoltetrachlorphthalein since it reliably demonstrates a pathologic condition in the liver if the reduction, destruction and elimination of the stain are slower than the standard.

Insulin and Liberation of Heat.—Noyons and his co-workers analyze the sequence of symptoms arising after injecting insulin into rabbits. It is striking that the regulation of heat is disturbed earlier than the production of heat. As to the muscular convulsions, they hold that these movements are merely a compensatory means for the drop in temperature. This simpler explanation contradicts slightly MacLeod who holds anoxemia responsible for the convulsions.

Action of Muscle Extract on Muscular Work.—De Vaucleroy found in her experiments, made on frogs, that muscular extracts have rather an exciting influence on fatigued muscle.

The Ergotamin Pupil Reaction.—Zunz observed a miotic influence of ergotamin on the pupils of dogs, cats and frogs.

Journal de Radiologie et d'Electrologie, Paris

8: 1-48 (Jan.) 1924

Serial Roentgenograms of the Duodenum. A Gunsett and Weigel.—p. 1.
*Roentgenography of the Vessels in the Lungs. J. Garcin.—p. 8.
Results from Ionometric Measurements. Nadaud.—p. 17.

Pulmonary Arborization.—Garcin's roentgenologic experiments made on lungs excised as a whole, with the heart, proved that after insufflation and artificial circulation the bronchial and vascular ramifications, respectively, can be clearly distinguished. Those belonging to the blood vessels are relatively darker than those of bronchial origin.

Journal d'Urologie Médicale et Chirurgicale, Paris

17: 1-96 (Jan.) 1924

Gonococcus Culture and Vaccine. J.-B. Giscard.—p. 1.
Bacteriologic Diagnosis in Urogenital Disease. Roucayrol.—p. 19.
*Hemorrhagic Cystitis in Young Children. G. Cirillo.—p. 25.
Hypogastric Cystoscopy After Cystostomy. A. Dor.—p. 29.

Hemorrhagic Cystitis in Young Children.—Cirillo reports two cases of hemorrhagic cystitis due exclusively to *Bacillus bifidus-communis* in baby girls. He treated them internally with potassium iodid. Both recovered. One was 4 months, the other 3 years old.

Lyon Chirurgical

21: 1-116 (Feb.) 1924

*Spinal Tumors. E. Flatau and B. Sawicki.—p. 1.
Simple Ulcer of the Ileum. Rutkowski.—p. 11.
*Vascular Lesions from Live Wire. Martin et al.—p. 13.
Interposition of Uterus in Prolapse. Cotte and de Rougement.—p. 27.
*Surgical Treatment of Tachycardia. R. Leriche.—p. 39.

Surgery Plus Irradiation of Spinal Tumors.—In two of Flatau and Sawicki's three cases the tumor was in the vertebra and had invaded the spinal cord. In the other case, the tumor was in the cord and had invaded the vertebrae. The tumor was excised and the region was exposed to the roentgen rays. The patients are in comparative good health now, five and nine years since the operation. In the third case, the primary tumor was in the ilium and was inaccessible. The metastasis in the spine, five years after the first symptoms, had induced total spastic paraplegia of the legs, with edema and eschars, and the consultants warned against operative intervention. But the paralysis and edema subsided after removal of the tumor, plus irradiation, in 1922, and the man, now 50, has regained his earning capacity.

Histopathology of Vascular Injury from Live Wire Accidents.—Martin and his co-workers call attention to the disintegration in the media of the arteries injured—a primary mechanical vascular lesion which leaves the lumen intact. This explains the slowness of the development of the lesions in question, although they are liable to entail secondary hemorrhage, infections and gangrene.

Possibility of Surgical Treatment of Tachycardia.—Leriche presents merely the theoretical bases to justify removal of the left stellate ganglion as a logical treatment of paroxysmal tachycardia.

Paris Médical

85-96 (Jan. 26) 1924

*Treatment of Anal Fissure. L. Delherm and R. Savignac.—p. 85.
Technic for Pleurotomy. Ameline and P. Lubin.—p. 93.
*Complications After Antityphoid Vaccination. R. Benon.—p. 94.

Anal Fissure Treated by High-Frequency Current. — Delherm and Savignac extol the value of the high-frequency electric current in fissure of the anus with painful spasm of the sphincter. Complete recovery followed in 75 per cent. of their cases. They theorize to explain the curative effect as partly due to the disinfecting and anesthetizing of the wound, and the diathermic action, inducing rapid regeneration.

Complications After Antityphoid Vaccination. — Benon reports cases in which different nervous disturbances developed after vaccination with antityphoid serum. The complications included general mental and somatic depression, mania, and, in one case, motor disturbances probably of emotional origin on an asthenia basis. All recovered apparently completely.

145-168 (Feb. 16) 1924

Tissue Metaplasia and Cancer. P. Menetrier.—p. 145.
Recent Studies on Cancer. G. Roussy.—p. 151.
*Surgery of Rectal Cancer. P. Lecène.—p. 155.
Treatment of Uterine Cancer. Gosset and Monod.—p. 158.
*Treatment of Complications of Cancer. M. Renaud.—p. 162.

Surgery of Rectal Cancer.—Lecène emphasizes the importance of the early diagnosis of rectal cancer. It is easily possible by immediate rectoscopic and palpatory examination in case of signs suggesting enteritis, expulsion of mucus and blood, in adults. Only an early operation with extensive excision can result in permanent recovery.

Treatment of Cancer in the Period of Complications.—Renaud enumerates the main features of late cancer symptoms; among them, secondary local infections, pyelonephritis, gastro-intestinal disturbances, hemorrhages, compression of different organs and pains are most important. He disapproves of administering morphin too freely, but, on the other hand, he advocates general tonic treatment with arsenicals, even with arsphenamin, given either intravenously or hypodermically.

169-184 (Feb. 23) 1924

*Herpes Zoster. C. Achard.—p. 169.
*Treatment of Tuberculosis. A. Signorelli.—p. 176.
Acute Tuberculous Polyadenitis. R. Tillier and F. Lagrot.—p. 178.
Prophylaxis of Malaria. V. Mandru.—p. 181.
Importance of Muscles and Joints. A. Schwartz.—p. 182.

Herpes Zoster.—Achard recalls that it is not yet established whether herpes zoster is a simple trophic disturbance of certain nerves or an infectious disease. Some claim it to be specific, others deny this. It has developed in the course of pneumonia, tuberculosis, syphilis and meningitis. Moreover, there is some evidence of contagiousness on record. There is a tendency of late to connect the herpes eruption with varicella, and, pathologically, to ascribe the disturbance to hemorrhagic lesions in the intraspinal ganglions.

"Ventralization" Therapy in Pulmonary Tuberculosis. — Signorelli observed that tuberculous patients with a low-standing diaphragm were more liable to develop a severe course than others without this. Thus he found that an enforced "rest cure" with abundant nourishment has not merely a tonic influence but acts especially as a means to raise the diaphragm to a relatively higher plane. Mechanical causes of the improvement in these cases may be a more advantageous distribution of the blood, and alteration of the intrathoracic pressure. He also advocates combination of the foregoing methods with artificial pneumothorax.

Presse Médicale, Paris

32: 145-156 (Feb. 16) 1924

*Vitamin A and Cod-Liver Oil. E. Poulsson.—p. 145.
Specific Therapy of Staphylococcus Infection. A. Mauté.—p. 148.
Luxation of the Shoulder Holding Forearm Erect. J. Bernardbeig and R. Charry.—p. 149.
Mishaps with Lumbar Puncture. P. Pagniez.—p. 151.

Vitamin A and Cod Liver Oil.—Poulsson emphasizes the importance of cod liver oil in rachitis and tuberculosis. Not long ago the theory was advanced that the specific acids of the oil would kill tubercle bacilli, but this has been refuted. It combats the tuberculosis by the nonspecific, tonic action of a fat-soluble vitamin, absolutely indispensable for normal tissue growth.

32: 177-188 (Feb. 27) 1924

Types and Clinical Forms of Diseases. L. Bard.—p. 177.
The Treatment of Syphilis. P. Halbron et al.—p. 180.
*Operability of Cervix Cancer. S. Mossé.—p. 181.

Operability of Cancer of the Uterine Cervix. — Mossé reviews several clinical forms of cervix cancer, and states that intracervical and external growths on the lips of the cervix are operable, but those infiltrating the parametrium suggest a more sinister diagnosis.

32: 189-200 (March 1) 1924

*Regeneration of Mucosa. L. Michon and Magrou.—p. 189.
*Phlorizin Glycosuria. A. Crainicianu and S. Goldenberg.—p. 191.
Technic for Periarterial Sympathectomy. J. Hertz.—p. 193.
*Precautions with Chenopodium. L. Cheinisse.—p. 193.

Spontaneous Regeneration of the Gastric Mucosa After Resection.—Michon and Magrou noted in five dogs, after partial resection, that the gastric mucosa spontaneously regenerated. First there was abundant karyokinesis and later crypt-formation. However, the muscularis mucosae failed to regenerate.

Phlorizin as a Test for Pregnancy.—Crainicianu and Goldenberg found that glycosuria induced by 2 mg. of phlorizin does not definitely prove pregnancy, but, if this test be negative, it practically excludes the possibility of pregnancy.

Precaution in Using Chenopodium Oil.—Cheinisse warns against indiscriminately prescribing chenopodium as a vermifuge, since a few cases have been recorded in which untoward symptoms developed. Among them convulsions and a clouded state have been reported.

Progrès Médical, Paris

65-76 (Feb. 2) 1924

*The Families of Psychopaths. Vinchon.—p. 65.
Forceps Lesions. Demelin.—p. 67.
Prostitution Should Aid in Prophylaxis. G. Saint-Paul.—p. 68.

Behavior of the Families of Psychopaths in Respect to the Physician and the Patient.—Vinchon complains that the close relatives of a psychopath do not realize how harmful for him their ill advised care may become. They first try to hide his insanity. Later, when the patient offers violent resistance, with hallucinations, and interprets things and events in a morbid manner, acts dangerously toward his environment, or becomes quite unmanageable in his dementia, then the emotional reaction of the family not only conflicts with the patient's own interests but with those of the family itself. In fact, the entire family develops a certain kind of abnormal nervous condition from the strain which the patient's management exacts of them. Proper education of the relatives would relieve this condition.

Revue Franç. de Gynécologie et d' Obstét., Paris

19: 1-32 (Jan. 10) 1924

*Liver Function in the Puerperium. M. Rivière and L. del Valle.—p. 1.
Rarity of Rachitic Pelvis in Syria. L. Laurentie.—p. 21.

Hemoclasis and Liver Function in the Puerperium.—Rivière and Valle discuss the value and significance of the test hemoclastic crisis in the puerperium. This test is based on the idea that normally the liver transforms all alien albumin, but if it fails to do so, the alien albumin circulating in the blood causes hemoclasis and leukopenia. When this occurs, hepatic insufficiency may be inferred. But, they add, we must be very cautious with such an inference since there is a legion of other factors, beside liver functioning, which influence the blood cells.

19: 33-64 (Jan. 25) 1924

*Delivery of Retained Placenta. V. Cathala and E. Biancani.—p. 33.
*Puerperal Eclampsia. Salen et al.—p. 39.
Postpartum Inversion of the Uterus. Gaujoux et al.—p. 47.

Hydraulic Procedure for Expulsion of Retained Placenta.—Cathala and Biancani recommend expulsion of the placenta

by injecting a neutral or antiseptic solution into the umbilical vein. This procedure is generally called turgidization. The main indication is after a difficult delivery of the fetus under anesthesia, as it does away with the necessity for prolonging it. It is contraindicated in inertia of the uterus as, they say, it does not stimulate contractions.

General Eclampsia Treated by Bloodletting.—Salen and his co-workers report five cases of grave eclampsia in which bloodletting in the amount of at least 600 gm. relieved the patients. The powerful depurative action of venesection on the blood aided in bringing about very good results, without the use of chloroform or morphin.

10: 65-96 (Feb. 10) 1924

*Pituitary Extract in Obstetrics. M. P. Rucker and C. C. Haskell.—p. 65.
Remote Sequelae of Hysterectomy. F. Jayle.—p. 79.
*Lesions in Breech Presentation. G. Salen.—p. 80.

Rupture of the Uterus After Pituitary Extract.—Rucker and Haskell in response to the comment of Pouliot and Trouchard on their article reporting fifty-three cases, review American, French and English reports concerning rupture of the uterus, sometimes fatal, with frequent death of the fetus, following obstetric administration of a pituitary preparation. They hold that multiparity is not a predisposing factor for the rupture, and that even if all rules of indication are most cautiously observed, yet catastrophes may occur.

Injury of Fetus in Hastening Delivery with Breech Presentation.—Salen reports a case in which he was compelled to perform bidigital traction on the groin of the fetus. The infant developed first an ecchymosis, then a slough. Although this healed perfectly, yet he suggests the necessity for extreme caution with this manual procedure since it is liable to injure the fetal tissues.

Schweizerische medizinische Wochenschrift, Basel

54: 185-208 (Feb. 21) 1924

Tuberculosis of Bronchial Glands in Children. E. Wieland.—p. 185.
*Examination with the Duodenal Tube. O. Winterstein.—p. 190.
*Leukocytes in Tuberculosis. T. and J. Stephani-Montana.—p. 196.
*Sterilized Human Milk. M. Reber.—p. 198.
A Rare Iron Pigment. J. L. Nicod.—p. 200.

Examination with the Duodenal Tube.—Winterstein reports cases in which the use of the duodenal tube did not prove such a sensitive means for differential diagnosis as has been claimed for it. Although it may give valuable information as to the condition of the gallbladder, the common bile duct, the liver, duodenum and pancreas, still many signs may be annoyingly misleading. A positive blood test does not necessarily prove the presence of an ulcer. The blood may be derived from superficial abrasions due to the tube introduced. The method's greatest value is in differential diagnosis by exclusion.

Neutrophil Leukocytes in Pulmonary Tuberculosis.—T. and J. Stephani-Montana direct attention to the special shape of the neutrophil nuclei in pulmonary tuberculosis. Comparative clinical and microscopic observations proved that neutrophil leukocytes with a rather extensive ramification of their nucleus announced regularly a favorable outcome. The more rounded nuclei corresponded with a sinister course.

Use of Sterilized Human Milk in the Feeding of Infants.—Reber believes that, since sterilized, bottled human milk is just as nourishing as the fresh, it could be stored and marketed on a comparatively large scale. However, the taste and appearance of this preparation are not very inviting as yet, which handicaps its larger utilization.

Pediatria, Naples

32: 241-304 (March 1) 1924

*Vaccine Prevention of Scarlet Fever. B. Sindoni.—p. 241.
*Protein Treatment in Whooping Cough. G. Macciotta.—p. 249.
Mongolian Idiocy. C. Gallo.—p. 269.
Acute Polyarthritis in Nursling. F. Lo Presti-Seminerio.—p. 281.
Tuberculosis of Os Pubis. D. Rottini and G. Carmelich.—p. 286.

Vaccine Prevention in Scarlet Fever.—Sindoni used cultures from scarlet fever patients, prepared according to Di Cristina. She gave three injections of 2 c.c. each on consecutive days, intramuscularly. Only one nursling—who had been in the incubation period—contracted the disease. The other 291 subjects remained healthy in spite of being exposed to infection.

Protein Treatment in Whooping Cough.—Macciotta treated 140 children suffering from whooping cough. He injected from 1 to 3 c.c. of sterilized milk into the buttocks, and repeated the injection twice at two day intervals at least. The results were very good.

Policlinico, Rome

31: 245-278 (Feb. 25) 1924

Experimental Research on Spirochetosis Icterohemorrhagica. V. Vanni.—p. 245.
Criminality and Hystero-Epilepsy. E. Patini.—p. 247. Conc'n.
*Treatment of Hyperemesis of the Pregnant. P. Castagna.—p. 252.

Treatment of Hyperemesis of the Pregnant.—Castagna treated five women with incoercible vomiting of pregnancy with intravenous injections of 2 c.c. of a 35 per cent. solution of calcium chlorid. The results were perfect after from one to three injections.

Riforma Medica, Naples

40: 193-216 (March 3) 1924

Cyst-Adenoma of the Prostate. L. Colella.—p. 193.
*Virulence of Pneumococci in Vegetable Broth. A. Picazio.—p. 195.
Prognosis of Pulmonary Tuberculosis. F. Cardillo and E. Tarantola.—p. 197.
Congenital Stenosis of the Pylorus. C. Castelli.—p. 200.
Nitritoid Crisis. A. Versari.—p. 203.

Virulence of Pneumococci in Vegetable Broth.—Picazio cultivated pneumococci in a 10 per cent. vegetable broth (from beans, etc.). The germs grew well but rapidly lost their virulence. Pane had found a lowered toxin production in diphtheria bacilli in vegetable culture mediums of this kind.

Siglo Médico, Madrid

73: 157-184 (Feb. 16) 1924

*Nodding Spasm in Infant. Baltasar Hernández Briz.—p. 157.
Hydatid Cysts in the Lungs. Finochietto.—p. 158. Cont'd.
*Treatment of Trichinosis. M. Algora y Nieto.—p. 160.

Nodding Spasm in Infant.—The infant of 6 weeks presented a typical spasmus nutans, when brought to the foundlings' asylum with minute granules on the scalp. The microscope revealed that the supposed eruption was due to *Pediculus pubis* burrowing into the scalp. Delousing cured the "nodding spasm."

Neo-Arsphenamin in Treatment of Trichinosis.—Algora relates that there have been a number of cases of trichinosis recently in his district, and the seven treated by intravenous injection of 0.45 gm. of neo-arsphenamin promptly recovered. Two or three injections were usually necessary. All had pronounced eosinophilia. In the case described in detail, the edema and the fever subsided so promptly after the first injection that there was no necessity to repeat it.

Deutsche medizinische Wochenschrift, Berlin

50: 261-292 (Feb. 29) 1924

Retrenchment in Public Health Matters. M. Hahn.—p. 261.
Contracted Pelvis. F. Kirstein.—p. 264.
Treatment of Gastric Ulcer. C. Rohde.—p. 267.
Serodiagnosis of Syphilis in Rabbits. Manteufel and Beger.—p. 269.
*Gas Metabolism of Cancer Rats. M. Händel and K. Tadenuma.—p. 271.
Roentgen Treatment of Tuberculosis. K. Stettner.—p. 271.
*Anisocoria in Pulmonary Tuberculosis. L. Alterthum.—p. 275.
Typhus Parotitis. W. M. Werzblowsky.—p. 276.
*Ultraviolet Rays and the Blood. J. Koopman.—p. 277.
Treatment of Swine Erysipelas in Man. Esau.—p. 278.
Dermatologic Treatment. II. M. Joseph.—p. 279.
Pathology of Diabetes Insipidus. F. J. Schmidt.—p. 280.
Traumatic Varicella. Dreyer.—p. 280.
Test of Photosensitiveness. K. Finkenrath.—p. 280.
Economy in Management of Institutions. Neumann.—p. 281.

Gas Metabolism in Cancer Rats.—Händel and Tadenuma found a lowered oxygen intake in carcinomatous rats. Roentgen treatment of the tumor increased the metabolism.

Anisocoria in Pulmonary Tuberculosis.—Alterthum had interesting, though not very reliable results, with provoked difference of pupils in affections of the apices. The precise amount of atropin given in instillation in each eye is important.

Ultraviolet Rays and the Blood.—Koopman irradiated guinea-pigs with ultraviolet rays. The complement doubled in strength after one hour and diminished after two. The animals died after irradiation lasting three hours.

Klinische Wochenschrift, Berlin

3: 385-432 (March 4) 1924

Protein Metabolism. K. Felix.—p. 385.
Pathogenesis of Ozena. A. Lautenschläger.—p. 389.
*Lactic Acid and Muscle Contractures. O. Meyerhof.—p. 392.
*Registration of Metabolism. J. G. D. de Barenne and Burger.—p. 395.
Calciprival Constitution. K. Blühdorn.—p. 396.
*Ring Test in Syphilis. Stern.—p. 398.
*Treatment of Bronchial Asthma. P. Jungmann and F. Brüning.—p. 399.
Paratyphoid B. P. Wichels.—p. 400.
Sedimentation Test. M. Bönniger and W. Herrmann.—p. 403.
"Breathing of Children's Blood." Abderhalden and Wertheimer.—p. 405.
Reply. Faerber and Telleria.—p. 406.
The Respiratory Quotient. E. Helmreich and R. Wagner.—p. 406.
Guanidin Poisoning. H. Hummel.—p. 407.
Hemorrhages in Brain and Cord. K. Mendel.—p. 408.
Treatment of Prolapse. H. A. Dietrich.—p. 409.
Welfare Work for Cripples. W. V. Simon.—p. 411.
*Functional Changes in Vessels. Krawkow (Petrograd).—p. 414. Conc'n.

Lactic Acid and Muscle Contracture.—Meyerhof found with Himwich and Matsuoka that contracture of muscles is accompanied by a similar formation of lactic acid as he had demonstrated in normal contractions. While rigor mortis starts when the concentration of lactic acid has reached a certain degree, the acid formation in contracture starts with its beginning, and lasts as long as the tension of the muscle increases. The amount of lactic acid strictly parallels the increasing hardness of the muscle.

Graphic Registration of Metabolism.—De Barenne and Burger describe their registration method for gas metabolism experiments. They found with it an increase of 10 or more per cent. in decerebrate rigidity of cats.

Ring Test in Syphilis.—Stern recommends using absolutely fresh serums for the turbidity reaction to avoid false positive results. He discusses the different conditions which influence the results of such tests.

Treatment of Bronchial Asthma.—Jungmann and Brüning extirpated the cervical sympathetic (including the stellate ganglion) in three patients with bronchial asthma; in two of them on the left side, and in one on the right. The results were negative so far as the asthma was concerned.

Function of Surviving Vessels.—Krawkow reports the results of the experiments made by his school on arteries of various organs. Rabbits' ears are an excellent object. The arteries react for many days. Human fingers and toes can be preserved for months. Their temperature remains higher than that of the surroundings. The nails grow, and pilocarpin produces sweating. Similar experiments were made on the coronary arteries of hearts which were stopped by strophanthin. They produced inflammation of the ear either before it was amputated, or after amputation. In both instances the vessels reacted weaker to vasoconstricting drugs and stronger to the vasodilating. The automatic periodic contractions of the arteries are lost in inflammation. The loss of reactivity was especially pronounced in the kidneys and spleen. The ability to dilate was decreased in arteriosclerosis and spontaneous gangrene, while the contractility was increased. In severe sclerosis, the coronary arteries did not react at all. There was a marked parallelism between the clinical signs of loss of vascular tonus and the reactions of the surviving vessels.

Medizinische Klinik, Berlin

20: 267-298 (March 2) 1924

Epidemiology in South America. R. Kraus.—p. 267. Conc'n, p. 301.
Surgical Use of Esophagoscopy. H. Stegemann.—p. 269.
*Treatment of Glaucoma. C. Hamburger.—p. 274.
Mesenchymal Stimulation Treatment. F. Mattausch.—p. 277. Conc'n.
Vaccine Treatment of Gonorrhea. V. J. Marselos.—p. 282.
Theory of Wassermann Reaction. L. Neufeld.—p. 283.
Practical Gynecology. E. Runge.—p. 285. Cont'n.
Infectious Diseases in Children. Fiebelkorn.—p. 286.
Dangers of Discontinuing Social Welfare Work. Wreschner.—p. 297.

Treatment of Glaucoma.—Hamburger injects in local anesthesia from 0.2 to 0.4 c.c. of a 0.1 per cent. solution of epinephrin under the conjunctiva, near the external circumference of the cornea. He had excellent results in chronic glaucoma and did not have to repeat the injection for weeks, when using eserin in between. Acute glaucoma should be treated surgically; his conservative method gave only once a good result.

Münchener medizinische Wochenschrift, Munich

71: 223-256 (Feb. 22) 1924

Keratomalacia. A. Peters.—p. 223.
*Capillaries in Menière's Disease. W. Parrisius.—p. 224.
Pulmonary Tuberculosis and the Sympathetic. K. Käding.—p. 225.
Technic for Sedimentation Test. Berczeller and Wastl.—p. 228.
Sedimentation Test and Color Index. B. Behrens.—p. 229.
Sedimentation Test in Cancer. W. Hoffgaard.—p. 231.
*Diphtheria Immunization. W. Böhme and G. Riebold.—p. 232.
Treatment of Bronchial Glands in Children. K. Klare.—p. 234.
Irreducible Congenital Dislocation of Hip Joint. Schulte.—p. 235.
Treatment of Multiple Sclerosis. W. Schmitt.—p. 235.
Treatment of Orthostatic Albuminuria. W. Flade.—p. 236.
Treatment with Autovaccine. P. v. Zezschwitz.—p. 237.
Treatment of Tuberculous Pyopneumothorax. L. Lagrèze.—p. 237.
Clitoris Cysts. J. Stukowski.—p. 238.
Treatment of Eczema. K. Ochsenius.—p. 239.
"Hysterectomy or Castration?" Sellheim.—p. 239.
Hemorrhages from Unusual Causes. Ledderhose.—p. 240.
Examination of Annuitants. Bürgers and Bachmann.—p. 242.

Capillaries in Menière's Disease.—Parrisius examined clinically three patients with Menière's disease and twenty-three with glaucoma. All of them presented striking changes in the shape of the capillaries and type of blood stream. He believes that this may account for the clinical syndromes observed.

Diphtheria Immunization.—Böhme and Riebold inoculated guinea-pigs on the skin with living diphtheria bacilli and produced immunity. Similar experiments on sixty-two persons seem to demonstrate the harmlessness of the method.

71: 257-288 (Feb. 29) 1924

Pyelitis in Pregnancy. W. Stoeckel.—p. 257.
Anatomic and Chemical Changes in the Pancreas. G. Hoppe-Seyler et al.—p. 260.
Bone Regeneration. C. Rohde.—p. 262.
*Pressure in Central Artery of the Retina. C. Bliedung.—p. 264.
*Diagnosis of Lead Poisoning. Teleky.—p. 266.
*Beginning Tabes. A. Wittgenstein.—p. 269.
Application of Dry Heat in Respiratory Disease. K. H. Gross.—p. 271.
Catalase in Dysentery Bacilli. A. Keck.—p. 272.
Muscles and Talipes Cavus. H. Debrunner.—p. 273.
Use of Cement in Orthopedics. H. Knorr.—p. 274.
*Birth Dislocation of Eyeball. Gerdes.—p. 274.
Compression of Stomach by Colon. A. H. Hofmann.—p. 275.
"Spasms in Encephalitis." H. E. Lorenz.—p. 275.
Nervous Stomach Affections. F. Cramer.—p. 275.
Breast-Feeding and Weight of New-Born in Saxony. J. Schoedel.—p. 277.

Pressure in Central Artery of the Retina.—Bliedung describes his apparatus for determination of blood pressure in the central artery of the retina. The ratio between the systolic pressure in the brachial and central arteries is about 100:85 in men, aged 30, and 100:78 at 60.

Diagnosis of Lead Poisoning.—Teleky observed a weakening of the extensors of the hands as a frequent and sometimes the only sign of lead poisoning. A pale complexion is also important. Basophilic stippling of the erythrocytes seems to occur early only if the lead intake is great.

Beginning Tabes.—Wittgenstein reexamined patients suspected of tabes. She concludes that signs of irritation of sensory nerves alone cannot be considered as sufficient for the diagnosis of tabes so long as there are no direct symptoms of degeneration of the posterior columns. They represent only precursory stages.

Birth Dislocation of Eyeball.—Gerdes dislocated completely with the obstetric forceps the left eyeball of the baby. It was easily pushed back into the orbit. He saw the patient eighteen years later. No pathologic changes could be detected.

Wiener klinische Wochenschrift, Vienna

37: 203-229 (Feb. 28) 1924

Blood Transfusion. K. Nather.—p. 203.
Paradoxic Air Embolism. H. Steindl.—p. 206.
*Foot and Mouth Disease in Man. F. Gerlach.—p. 210.
Blood Transfusion in Hematology. G. Holler.—p. 212.
Treatment of Epidemic Meningitis. E. Wiener.—p. 215.
*Blood Sugar After Milk Injections. F. Högler.—p. 215.
Blindness After Carbon Monoxid Poisoning. J. Fejér.—p. 216.
What Can Be Learned from America. K. F. Wenckebach.—p. 217.
Conc'n, p. 243.

Foot and Mouth Disease in Man.—Gerlach's daughter, aged 5½, was infected by eating butter and cream. The disease affected the mouth and nails, and apparently also the heart. The child recovered in ten days. Inoculation of the content of the blisters into the skin of the feet of guinea-pigs produced the disease.

Blood Sugar After Milk Injections.—Högler determined the blood sugar after parenteral injection of sterile milk. Normal persons reacted with hyperglycemia, while the blood sugar decreased in diabetics.

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

87: 1-224 (Feb. 9) 1924

Irradiation of the Ovaries. J. Wieloch.—p. 1.
Transmission of Movements to Movable Contents of the Body. H. Sellheim.—p. 13.
*Direct Delivery of the Shoulder. C. Abernetty.—p. 36.
Anomalies of the Fallopian Tube. L. Schoenholz.—p. 56.
Perforation of the Uterus. A. Heyn.—p. 92.
*Atypical Rupture of the Uterus. K. Heim.—p. 102.
*An Umbilicocephalopagus Monster. H. Krause.—p. 105.
*Observations on the Uterus. F. Ludwig and E. Lenz.—p. 115.
Capillary Pressure. F. Grzechowiak.—p. 128.
A Case of Dystrophia Adiposogenitalis. H. A. Dietrich.—p. 146.
*Two Cases of Physometra. K. Heim.—p. 156.
Heart Lesions from Anesthetics. H. Strube.—p. 167.

Direct Delivery of the Shoulder.—Abernetty recommends Müller's method for directly delivering one shoulder, even with second degree contraction of the pelvis. If the first attempt fails, he turns the legs of the infant up over the mother's pubis and pulls down the posterior shoulder. If even this is unsuccessful, he applies traction to the anterior shoulder until it is brought below the symphysis. Then Müller's grasp may be available.

Atypical Rupture of the Uterus.—Heim reports a case in which a rupture, 11 cm. long, came under observation only two hours after the normal delivery. The rupture was in the posterior wall of the uterus, and entailed intra-abdominal hemorrhage, with extremely alarming symptoms when the placenta was about to become detached. After abdominal section and regular surgical management of the rupture, the patient recovered entirely.

A Rare Double Monster.—Krause describes an interesting umbilicocephalopagus in which the livers were grown together and the anterior fontanel was common to both the fused twins.

Pharmacologic Effects on the Uterus.—Ludwig and Lenz made very extensive experiments on pregnant and nonpregnant uteri of rabbits, through the so-called "abdominal window," for observation purposes. They found that each of the numerous tonicity-increasing substances applied had a distinctly different effect on the uterine muscle. They differed both in their tonicity-modifying and peristalsis-influencing effects. Atropin caused prompt relaxation, which statement conflicts with Sugimoto's and Kehrer's results with guinea-pigs.

Two Cases of Physometra.—Heim reports two fatal cases of gas gangrene of the uterus following infection. He recalls a third case in which he was able to save the patient's life by surgical intervention, owing to the indication of a distinctly hemotoxic blood-picture.

Zeitschrift für Kinderheilkunde, Berlin

37: 167-244 (Feb. 19) 1924

*Iron Metabolism in Infants. P. Schwartz et al.—p. 167.
Malformation of Heart. H. Chiari and R. Pilpel.—p. 192.
*General Paralysis and Heredity. I. Husler.—p. 200.
Leukocytosis in Whooping Cough. S. Hillenberg.—p. 222.
The Rumpel-Leede Phenomenon in Infants. C. Beintker.—p. 225.
*Organic and Inorganic Acidosis. Beumer and Soecknick.—p. 236.
Placental Transmission of Tuberculosis. W. Block.—p. 242.

Iron Metabolism in Infants.—Schwartz, Baer and Weiser examined the organs of new-born and young infants for iron. The birth marks a starting point for iron deposits in the liver and spleen. The maximum is reached between the first and second month. After the fifth month these organs do not contain any histologically demonstrable iron. They attribute this mobilization of iron to birth injuries and consecutive hemorrhages. The iron deposits are sometimes so extensive that a "blocking" of the reticulo-endothelium system is possible.

Syphilis of the Nervous System and Heredity.—Husler compares the data from 132 children in fifty-two families with at least one parent suffering from neurosyphilis, with those from 142 descendants of sixty syphilitic couples, and 160 children of fifty-one nonsyphilitic couples. He was unable to find any evidence of degeneration of the germ-cells by the syphilis, beyond the infection of the fetus. Children of persons with progressive paralysis averaged rather better than the children of other syphilitics. Among the "healthy" controls, he found a surprising amount of deficiency. He admits, however, that his investigations do not disprove the possibility of injury to the germinal plasma by the syphilis.

Organic and Inorganic Acidosis.—Beumer and Soecknick found that ingestion of sodium bicarbonate and secondary sodium phosphate enhances the starvation acidosis of infants, while ammonium chlorid inhibits it. They believe that this phenomenon is due to the action of the salts on the mobilization of glycogen in the liver.

Zeitschrift für klinische Medizin, Berlin

98: 305-547 (March 4) 1924

Extrarenal Water Metabolism. N. Róth.—p. 305.
Biology of the Kidney. L. Karczag and L. Paunz.—p. 311.
Protein Fractions of Blood Plasma. S. Rusznyák et al.—p. 337.
Photochemical Urine Test. A. v. Soós.—p. 347.
*Blood and Bile Cholesterol. I. Barát.—p. 353.
*Alimentary Glycosuria in Nephritis. G. Hetényi.—p. 357.
Electrocardiography of Fetus. E. v. Haynal and Kellner.—p. 365.
Polychromophilia and Basophilic Stippling. E. Eberhard.—p. 368.
Routine Hematology in 210 Men. N. Dungal.—p. 378.
Routine Hematology in 200 Women. H. Dornedden.—p. 401.
*Blood Counts in Tuberculosis. C. Zee-Whay.—p. 418.
"Blood Volume." R. Seyderhelm and W. Lampe.—p. 430.
Syphilis of the Stomach. T. Hausmann.—p. 433.
*Fasting and Alimentary Hyperglycemia in Diabetes. W. Beck.—p. 465.
*Physiology of Physical Training. H. Herxheimer.—p. 484.
"Braking" of Muscles and "Holding On." M. Berliner.—p. 524.

Blood and Bile Cholesterol.—Barát found a higher concentration of cholesterol in the bile of five patients with pernicious anemia, while the cholesterolemia was normal. She found lower concentrations of cholesterol in the bile of two patients with hemolytic jaundice, and in five with secondary anemia.

Alimentary Glycosuria in Nephritis.—Hetényi determined the sugar in the blood and urine in various diffuse affections of the kidneys before and after the intake of from 50 to 200 gm. of glucose. He observed an increased permeability in degenerative affections (nephrosis), and inhibition of glycosuria in some patients with glomerulonephritis. He discusses the possibility that the latter is a functional change due to an action of epinephrin or a similar substance—a suprarenal calking effect.

Blood Counts in Tuberculosis.—Zee-Whay made differential counts of the blood of twenty-five tuberculous patients. The absolute number of leukocytes is not essential. The relative neutrophilia is in proportion to the severity of the infection. It starts with an increase of the cells with "rod-shaped" nuclei (normally 4 per cent.). In the gravest cases, myelocytes may appear. Eosinophils diminish progressively as well as lymphocytes and monocytes.

Influence of Fasting on Alimentary Hyperglycemia in Diabetics.—In seven out of nine diabetics, Beck found a lowered tolerance for carbohydrates after forty-eight hours of fasting. He used the alimentary hyperglycemia as an indicator. The glycosuria was lower, but he explains this as due to the lowered initial blood sugar level.

Physiology of Physical Training.—Herxheimer made investigations on well trained sportsmen and on other persons before and after training. The trained men had as a rule a bradycardia, low blood pressure, a narrow heart and lymphocytosis. Many of them had Aschner's sign and the facialis phenomenon. These changes can be acquired by training. Sudden, hard training produced in unprepared young persons at first a tachycardia and increase in blood pressure.

Zeitschrift für Urologie, Leipzig

18: 65-128, 1924

*Uric Acid Infarcts in Infants' Kidneys. Armbruster.—p. 65.
*Retention of Urine and Sphincterectomy. I. Rauch.—p. 67.
Surgical Treatment of Nephritis. O. Rosenthal.—p. 70.
The Development of Cystoscopy. O. Ringleb.—p. 96.

Renal Uric Acid Infarcts in Infants.—Armbruster holds that although uric acid is known as toxic, yet its increased production in infants may find a good reason in its being a powerful antiseptic. This proves very efficient in the body's self-defense against a possible transumbilical infection of the first days.

Incomplete Retention of Urine and Sphincterectomy.—Rauch reports a case of contraction of the neck of the bladder entailing enormous distension, consecutive infection and incomplete retention of urine. A partial sphincterectomy corrected conditions and brought about a definite cure.

Zentralblatt für Gynäkologie, Leipzig

48: 149-192 (Feb. 2) 1924

Increased Virulence of Streptococci in Putrid Tissues. H. Küstner.—p. 150.
Chronic Pregnancy Neurodermatitis. G. H. Schneider.—p. 157.
*Crepitation on Head of Fetus. B. Ottow.—p. 159.
*Imminent Abortion from Overfilled Bladder. E. Borger.—p. 162.
Lobelin in Narcotic Disturbance. E. Puppel.—p. 165.
Regaining of Iodin from Used Mull. W. Gottstein.—p. 167.
Torsion of the Pregnant Uterus. R. Kiparsky.—p. 169.
*Puerperal Necrosis of Both Nipples. H. Katz.—p. 175.

Intra-Uterine Crepitation on the Fetal Head.—Ottow discusses the difference between the palpatory intra-uterine crepitation of the fetal skull and the typical shaking sounds of loosened bones in a dead fetus. He assumes that the crepitation is caused by the rubbing together of adjacent bones, while the theory that it is a sound from an elastic indentation of the bone does not seem to be tenable.

Imminent Abortion from Overfilled Bladder.—Borger reports that a young woman in the fourth month of pregnancy complained of violent abdominal and renal pains, with sudden and complete inability to void urine. The signs of impending abortion subsided in three days after 2 liters of urine had been drawn from the bladder.

Symmetrical Necrosis of Both Nipples in the Puerperium.—Katz reports the case of a young woman who had been given repeated large doses of ergot to prevent the possibly fatal outcome of excessive hemorrhage in labor. The third day, odorless and painless symmetrical necrosis of the nipples developed, with casting off of both, healing the twentieth day. He ascribes it to an increased vasoconstrictor tonicity.

48: 193-236 (Feb. 9) 1924

Artificial Vagina Made from Skin. L. Fraenkel.—p. 193.
*Intravenous Own Blood Transfusion. A. Roseno.—p. 197.
Sedimentation Speed in Abortion. G. Frommolt.—p. 202.
Narcohypnosis in Minor Surgery. W. Vogel.—p. 212.
*Treatment of Febrile Abortion. K. Laemmle.—p. 216.
"Menstruation After Operations on Ovaries." Mansfeld.—p. 220.
Increase of Blood Pressure in Pregnancy. R. Kuhn.—p. 221.

Intravenous Own Blood Transfusion.—Roseno reinfuses the blood which was saved at the operation. It is strained through several layers of gauze, kept warm, and slightly citrated. If most of the blood is coagulated, physiologic salt solution can be mixed with the still fluid portion for the reinfusion. He was impressed with the ease and reliability of this method of restoring the lost blood to the circulation in two cases of ruptured tubal pregnancy, the women absolutely or nearly pulseless. His technic is illustrated.

Treatment of Febrile Abortion.—Laemmle describes his technic, and says that in uncomplicated cases (with or without fever), without marked hemorrhage, the active and the expectant treatment furnish the same results as regards life and health. Active treatment shortens the period of sickness, causes less damage to the general health, and restores the patient to work sooner.

48: 237-280 (Feb. 16) 1924

The "Ultra-Sun" in Gynecology. Haselhorst and Peemöller.—p. 237.
Tuberculous Recto-Uterine-Skin Fistula. Penkert.—p. 247.
*Treatment of Eclampsia. W. Gessner.—p. 250.
Postoperative Gonorrheal Parotitis. Hellendall.—p. 256.
*Epileptic State in Labor and Puerperium. K. Burger.—p. 257.
Aseptic Departments in Hospitals. Madlener.—p. 259.
Treatment of Femoral Hernia. E. Wagner-Hohenlobbese.—p. 260.
A Myomatous Uterus Bicornis. A. Streibel.—p. 262.

Treatment of Eclampsia.—Gessner advocates in otherwise intractable eclampsia, immediate artificial termination of the pregnancy. It is advisable to resort to podalic version or perforation rather than to lose both mother and child.

Status Epilepticus at Childbirth.—Burger discusses whether epilepsy causes aggravation of the course of childbirth. He cites cases from the literature according to which the reaction of epilepsy to the pregnancy proved ambiguous.

48: 489-516 (Feb. 23) 1924

*Regulation of Fetal Gas Interchanges. W. Schmitt.—p. 489.
Vegetative Nervous System in Pregnancy. F. Peyser.—p. 496.
Skull Injuries from Kielland Forceps. K. Fink.—p. 501.
Advantages and Dangers of the Kielland Forceps. K. Heim.—p. 506.

Regulation of "Placental Respiration."—Schmitt reports the results of his transfusion experiments on the surviving placenta. He found that imperfect oxygenation causes acidulation of the tissues and consequently dilatation of the arteries. Obviously, this phase is then followed by better oxygenation, while the hydrogen-ion concentration decreases; this in turn causes arterial contraction. This automatic regulation may be termed placental respiration.

Casopis lekaruv ceskych, Prague

63: 365-400 (March 1) 1924

*Treatment of Adnexitis. Müller.—p. 365.
*Complete Heart Block. B. K. Prusik.—p. 369.
*Syphilis of the Pituitary. V. Jedlicka.—p. 378. Conc'n.

Treatment of Adnexitis.—Müller rarely saw recoveries with conservative treatment of really chronic inflammations of the uterine adnexa. He had very good results with radical treatment of 424 patients, including thirty-five cases of tuberculosis. The total mortality was 4.4 per cent. With the exclusion of the *a priori* hopeless cases it would be only 2.1 per cent.

Complete Auriculoventricular Block.—Prusík publishes the history, electrocardiograms and polygrams of a man with complete auriculoventricular block and a lesion of the right ventricular division of the conducting system. Various vagotropic and sympathicotropic agents changed the frequency of the auricular contractions and the signs of the affection of the right division. Only epinephrin increased the pulse rate to 38. The experiments were done under graphic control. Necropsy revealed patches of sclerosis on the membranous septum.

Syphilis of the Pituitary.—Jedlicka made postmortem examinations in three cases of extensive syphilitic affections of the pituitary. The estimation of their significance for the clinical condition of the patients is difficult because of the presence of other syphilitic lesions, especially in the brain. The gland was practically intact in eight cases of congenital syphilis. Only in two of them were spirochetes present, apparently without causing any reaction in the pituitary. One of the glands examined contained hemopoietic islands similar to those present in other organs.

Nederlandsch Maandschrift v. Geneeskunde, Leiden

12: 93-144, 1923

*Separation of the Epiphysis of the Femur. J. H. Zaaijer.—p. 93.
*Hemorrhage from Intestinal Ulcer in Child. O. Schreuder.—p. 101.
Partial Dwarf Growth and Partial Giant Growth. Idem.—p. 108.
*Determination of Osmotic Resistance of Erythrocytes. P. van Paassen.—p. 114.

Spontaneous Separation of the Epiphysis of the Femur.—Zaaijer reports a case to show the ideal results attainable with reduction (Lorenz-Whitman) and immobilization in a plaster dressing. Two years later the epiphysiolysis occurred on the other side, and was treated in the same way. Function was perfect when the girl was examined five years later. He adds parenthetically that in a case of coxa vara, a peg of bone from the tibia was driven into the neck, after reduction, the same as for fracture of the neck. He was careful to avoid the vicinity of the center of ossification. The peg stimulated bone repair, and the roentgen rays showed complete ossification of the epiphyseal line in three and a half

months. In another case he reenforced the roof of the acetabulum by Albee's method, to prevent further slipping of the head of the femur to one side.

Menacing Hemorrhage from Ulcer in Small Intestine in Child.—Schreuder's patient was a boy, aged 8, and the almost fatal hemorrhage was traced to an ulcer in a diverticulum near the junction of the jejunum and ileum. An aberrant pancreas island was found in the tip of the diverticulum.

Osmotic Resistance of Erythrocytes.—Van Paassen reports that the Brinkman method for determining the osmotic resistance is sensitive and reliable, but it has thrown no more light on the nature of hemolysis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 893-1000 (March 1) 1924

Medical Education in the Netherlands. G. van Rijnberk.—p. 894.
*Syphilitic Peritonitis. J. A. Roorda Smit (Buenos Aires).—p. 899.
*Insulin Plus Glucose. S. E. de Jongh and E. Laqueur.—p. 907.
*Treatment of Certain Mental Affections. H. Breukink.—p. 911.
Histopathology of the Spinal Cord in Congenital Syphilis. Cornelia de Lange.—p. 919.
Historical Lever-Forceps. N. J. A. F. Boerma.—p. 926.
The Historical "Sympathy Powder." C. Bakker.—p. 928.

Syphilitic Peritonitis.—In two of the six cases Roorda Smit reports, the profuse ascites and other symptoms of peritonitis subsided completely under mercurial treatment. In one case it was secondary to cirrhosis of the liver, but in the other case inherited syphilis was evident. The presumptive diagnosis in both had been tuberculous peritonitis. In four other cases the adhesions from the syphilitic peritonitis had bound down the stomach, inducing hour-glass stomach. The palpation findings suggested gastric ulcer or cancer, but the absence of subjective symptoms, the good appetite, and the return of the fasting stomach to normal outline and palpation findings suggested a syphilitic disturbance. In two of the cases the peritonitis was primary, but in the other cases a movable kidney or a hydatid cyst had evidently been the primary irritating factor. The assumption of the syphilitic nature was confirmed in the entire group by the prompt recovery under specific treatment.

Administration of Sugar with Insulin.—De Jongh and Laqueur were impressed with the almost magical subsidence of the symptoms of acute insulin poisoning in rabbits when given glucose. They relate further that when series of rabbits were given glucose at the same time or just before the insulin, the rabbits bore incredibly large amounts of the insulin without harm. This seems to open the prospect that much larger amounts of insulin can be given to patients provided that glucose is given simultaneously. It might be possible thus to give the total daily dose at one time instead of fractioned. They have now started experiments in this line on pancreatectomized dogs, as they do not venture to apply to man the deductions from healthy rabbits only. But already they can announce that by this means these dogs bear unprecedented amounts of insulin in comparison to their weight.

Hypnosis-Catharsis in Treatment of Certain Mental Affections.—Breukink explains his method, which differs from Breuer's and Freud's in important respects, and is peculiarly useful in differential diagnosis and prognosis. "When it is possible to hypnotize the patient, his affection is curable." He gives instances of degenerative psychoses which had long been mistaken for dementia praecox, but which yielded to proper treatment. The injury from herding such cases with dementia praecox is obvious.

Acta Pædiatrica, Upsala

2: Supplement, pp. 1-142, 1924

*Basal Metabolism in Infants. G. Muhl.—p. 1.

Basal Metabolism in Infants.—Muhl made extensive experiments on the basal metabolism of two normal children. She found that fat reduction markedly diminished heat production without, however, influencing normal growth. In mild dyspepsia, resorption of calcium oxid and magnesium oxid was more handicapped than absorption of other minerals or of nitrogen, while in grave dyspepsia this ratio was reversed. Impaired retention of alkalis and chlorin can be ascribed to changes of the intermediary metabolism. Impaired resorption of nitrogen is mainly due to undernourishment caused by fat deprivation.

Hospitalstidende, Copenhagen

67: 49-64 (Jan. 23) 1924

*Comparison of Serologic Tests. H. Boas et al.—p. 49. Conc'n.
The Wieland Theory of the Oxidation Process. E. Rosling.—p. 56.

Comparative Serologic Tests.—Boas and his co-workers announce that the Wassermann test proved more reliable and sensitive than the Meinicke or Sachs-Georgi tests in examination of 2,235 specimens of blood and 29 of cerebrospinal fluid at the State Serum Institute at Copenhagen. But the sigma reaction was even more sensitive than the Wassermann, and the number of nonspecific responses was so small as to be negligible. They regard the sigma test as extremely promising. In 522 cases both the Wassermann and the sigma tests were positive and in 1,518 both were negative, that is, they harmonized in 91 per cent. of the total cases. The gradual subsidence of the sigma reaction in inherited syphilis under treatment contrasts with the unvarying behavior of the Wassermann reaction in the same circumstances.

67: 65-80 (Jan. 30) 1924

Technic for Thomsen's Blood Platelet Count. S. Petri.—p. 65.
*Composition of Venous Blood. C. Schwensen.—p. 70. Conc'n, p. 81.

67: 81-96 (Feb. 6) 1924

Cholesterolized Extract for Wassermann Test. K. Philipsen.—p. 89.

Composition of the Venous Blood.—Schwensen refers to patients with cardiovascular disease, saying that changes in position, even the briefest artificial stasis, have a remarkable influence on the composition of the venous blood. Serial examinations are worthless unless the patient has been reclining for at least half an hour, lying on his back, with his arms parallel to his body. The arm must be lying horizontal when the blood is drawn, and the stasis must be applied only briefly, best without a bandage. His research indicates that the ash in the venous blood, besides determining the volume of the blood cells, is a gage of the degree and permanence of the stasis.

Ugeskrift for Læger, Copenhagen

86: 175-196 (Feb. 28) 1924

*Tardy Rickets. K. Baagøe.—p. 175.
*Fracture of the Epistropheus. V. Ellermann.—p. 179.
Roentgen-Ray Diagnosis of Diverticulum in Jejunum. Baastrup.—p. 180.
*Roentgen-Ray Injury of the Larynx. O. Strandberg.—p. 181.
Spontaneous Fracture and Pains with Nontuberculous Disease of the Spine. Nielsen.—p. 184.

Tardy Rickets.—Baagøe recalls that while tardy rachitis used to be comparatively rare, numerous cases have been published during and since the war, and the osteomalacia observed in the young has been accepted as rickets affecting bones that have completed their growth. He describes a severe case in a girl of nearly 9; the rickets has continued its course since early childhood. Both father and mother had rickets in childhood, and three of their six children present it in a severe form, with positive Wassermann reaction. The child made great improvement under treatment of the rickets alone, and the improvement persisted after suspension of treatment for syphilis.

Fracture of the Epistropheus.—The man was able to resume work in a few weeks after the fracture, free from symptoms except that he held his head stiff and there were still pains when he tried to turn his head much, and dizziness when he bent over. He died suddenly nearly two months after the fracture. It had been treated with moist heat and massage.

Roentgen-Ray Changes in the Larynx.—Strandberg's patient was a man aged 41 who was given roentgen-ray treatment for an enlarged gland in the neck. The gland was removed and the roentgen-ray treatment continued. A condition developed which seemed to be severe laryngeal tuberculosis, but no evidences of tuberculosis could be discovered, and the whole was accepted as a roentgen-ray injury, ulceration, fistula, atrophy and sequestra. Under Finsen light treatment the process seems to have been arrested. He urges preliminary laryngoscopy in every case in which there is liability of roentgen rays reaching the larynx.